



RESEARCH PROJECT: FE AND SKILLS STEM DATA

Summary report

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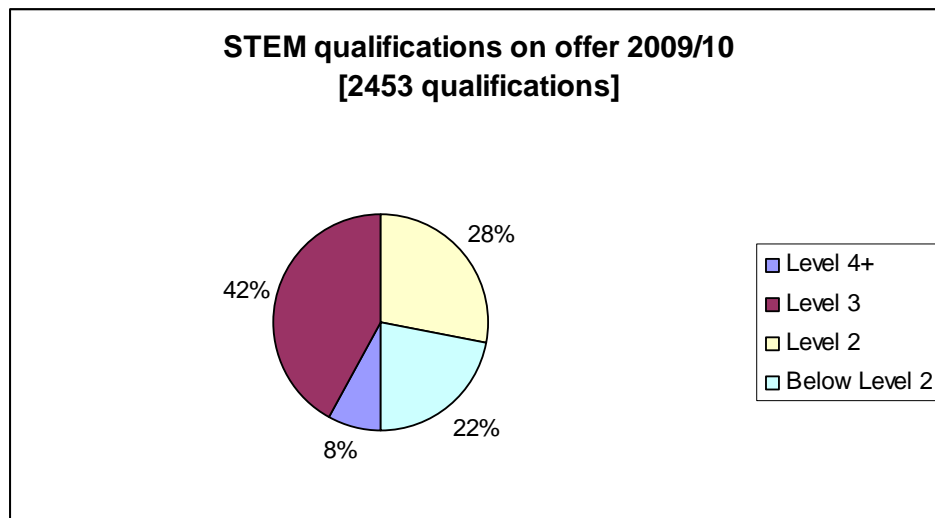
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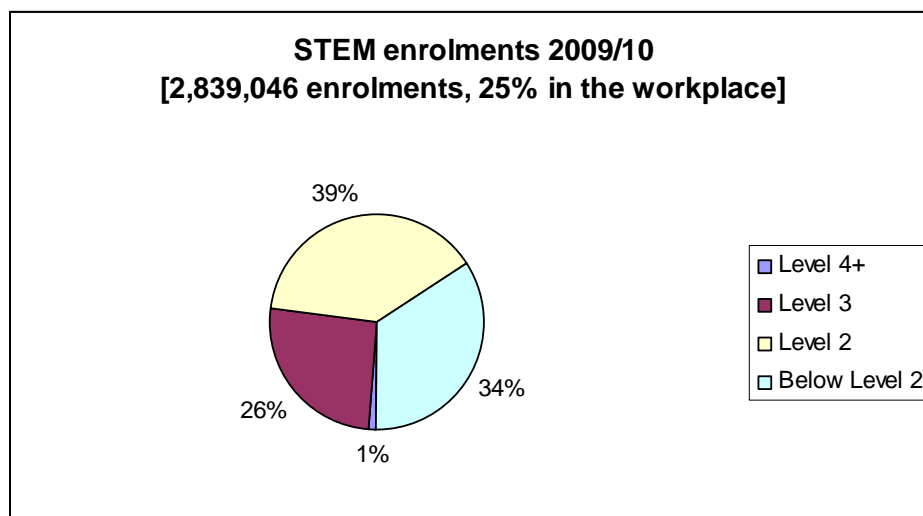
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Snapshot of publicly funded STEM in the FE & Skills system in England



The FE & Skills sector is complex and easily misunderstood. At first glance, there are more than 9,000 STEM or STEM related qualifications entered on the NDAQ and LAD databases. However, the FE STEM Data Project shows that once duplicate and redundant qualifications are removed from analysis, the number drops to 2,453 different STEM and STEM related QCF qualifications that were offered by the FE & Skills sector in England in 2009/10.



In 2009/10 there were:

- 54,400 learners taking Level 2 Science qualifications (162,343 at Level 3)
- 23,616 learners taking Level 2 Technology qualifications (92,876 at Level 3)
- 228,739 learners taking Level 2 Engineering qualifications (197,503 at Level 3)
- 374,762 learners taking Level 2 Mathematics qualifications (56,154 at Level 3)

In 2008/09, the last year for which full results are known:

- There were 223,653 achievements in Science and related (30% at or below Level 2)
- There were 506,517 achievements in Technology and related (72% at or below Level 2).
- There were 412,134 achievements in Engineering and related (64% at or below Level 2)
- There were 862,761 achievements in Mathematics and related and numeracy (92% at or below Level 2)

Section 1: Introduction

Policy context

1 The term 'STEM' groups together the subjects of Science, Technology, Engineering and Mathematics, all of which are closely aligned with solving many of the economic challenges facing the UK today.

2 In recent years the UK has seen increased interest in the successful uptake of STEM subjects in schools, colleges and universities, raising the skills and aspirations of learners and leading them towards careers related to these subjects.

3 The Further Education (FE) and Skills sector has an essential role to play in STEM education, improving progression through STEM related subjects and servicing the needs of employers with a suitably qualified workforce.

FE and Skills Sector background

4 The FE and Skills sector contributes to the STEM agenda in a variety of ways:

- It provides academic routes and forms a bridge between schools and higher education;
- It is key in meeting skills requirements through vocational education;

and because of its reach,

- It supports widening participation in STEM subjects by engaging people in learning who might otherwise be lost to traditional academic routes and,
- It supports the wider aim of raising 'scientific literacy and awareness'.

5 However, the contribution that FE and Skills sector makes, and has the potential to make, to STEM has been obscured by a lack of reliable and accessible data.

6 This is further complicated by the relative complexity of the sector and its funding processes.

7 There are currently over 1500 providers who are contracted to provide publicly funded provision within the sector, with an underlying provider base of over 5000. These providers range from very large General Further Education Colleges with a student base of over 100,000 to small private companies serving 20 to 30 learners. They include large and small independent training providers, specialist colleges serving learners with special needs, voluntary organisations delivering social inclusion through adult education and training,

employers training their own staff, and Local Authorities serving community needs.

8 This range of providers is needed to meet the diverse education and skills needs of the learners. In academic year 2008/09 over 4.7 million people participated in learning in the FE and Skills sector in England. They ranged in age from 14 years to over 80 years old, and could be studying multi-year full time courses or courses lasting only a few hours and a significant number of these learners were engaged in learning at their workplace. In 2008/09 these learners studied a total of over 10,000 different qualifications varying from basic skills in literacy and numeracy through to first degrees and post graduate diplomas.

Terms of reference

9 The aim of this project was to establish a reliable and accessible source of data on the contribution made by the FE and Skills sector to the provision of STEM skills in England. For the avoidance of doubt therefore, where 'FE and Skills sector' is used in the report, it refers to the FE and Skills sector in England.

10 The data will provide a baseline and looking forward will provide a basis from which to monitor trends and impact. They will support better policy making across government, partner organisations, professional bodies, employer bodies and the institutions that make up this sector.

11 The project sought to assemble and present data that describe the:

- S,T, E and M qualifications taken in the FE & Skills sector
- Contribution the sector makes to STEM 'A' level participation and achievement.
- Take up and achievement in STEM related 14-19 Diplomas.
- Extent to which FE staff hold qualifications directly relevant to the STEM subjects or disciplines they teach.

Governance

12 Following competitive tender and the appointment of Blue Alumni as the successful contractor, responsibility for leading the project was transferred to Matthew Harrison (Director of Education at the Royal Academy of Engineering).

13 A Steering Group was established to agree the content of the detailed data specification and manage the project under the guidance of the project lead. Membership of the group composed of representatives from across the STEM community, the Department for Business, Innovation and Skills (BIS) and the Department for Education (DfE).

14 The steering group has played a key role in ensuring that the data produced are widely accepted across the STEM community as a comprehensive and useful source of information.

15 The membership of the Steering Group is shown in Annex A.

Project Approach

16 The first requirement was to agree working definitions of what could be considered to be a S, T, E or M qualification for the purposes of the project (see Section 2)

The second requirement was to construct a list of qualifications that could be taken in the FE and Skills sector using NDAQ (now the Register of Regulated Qualifications) and LAD qualification databases.

17 The working definitions were then applied to each qualification to classify them as S, T, E or M. The process was iterative; with the working definition being refined as the qualifications were reviewed.

18 The classified master list of S,T,E,M qualifications was used to generate the data sets required to describe the contribution to STEM made by the FE and Skills sector, and provide comparative data from the Schools sector. The Individualised Learner Record (ILR) provided the source data on the FE and skills contribution to STEM. The Young Persons Matched Data set provided the source of the schools data.

19 BIS Analytical Services and the Data Service provided guidance and confirmation that the correct data and data definitions were used, and that the outputs conform to the reporting requirements for national statistics.

20 As the project progressed it became increasingly apparent that not only are the requirements of the four areas of science, technology, engineering and mathematics different, but so are the characteristics of the qualifications taken and the learners taking these qualifications. Therefore, in constructing the databases these differences had to be recognised, while still providing the capabilities to look across the four areas. The deep involvement of the STEM community was the enabling factor here.

21 As the project developed, it became apparent that it would be very difficult to present the full detail of the variety of the FE and Skills sector contribution to the STEM agenda within the format of a conventional report. The challenge was how to make the wealth of available data accessible to those who need it. The solution proposed by the project is a portable version of the underlying databases with a user friendly interface that will allow drill down and reporting of the data. The help of the Data Service has been invaluable in the development of this electronic facility.

22 The approach for the FE workforce data was slightly different from that used for qualification and learner data. The Institute for Learning (IfL) and

Lifelong Learning UK (LLUK) were the main collaborators for this part of the project, organising their own data sets so the STEM classification could be applied.

23 The project considered whether data should be produced as a single snapshot or as part of a continuing data set. The aspiration of the stakeholders is for a continuing data set with the potential for updating so passive provision was made for this in the way the data were configured.

Overview of the report

24 As this report can only provide high level summaries of the available data, further breakdowns of data covering such aspects as geographical coverage, full qualification listings, and learner age and ethnicity, are provided electronically at The Royal Academy of Engineering (contact matthew.harrison@raeng.org.uk)

25 The report provides a 'snapshot' of the FE and Skills sector contribution as described by the data available when the report was written. In addition to further detail, the electronic presentation contains data that are updated as the underlying sector data are updated. Therefore, the figures in this report (all sections) will not necessarily correspond to those provided in the electronic presentation.

26 Section 2 – gives details of the STEM definitions and the classification of qualifications, The main output, a lookup table of STEM relevant qualifications, is available electronically at The Royal Academy of Engineering (contact matthew.harrison@raeng.org.uk)

27 Section 3 - provides a high level summary of the STEM qualifications taken in the FE and Skills sector.

28 Sections 4 to 7 - provide more detailed analyses, which are organised according to each of the four STEM areas: Science, Technology, Engineering and Mathematics, as this reflects the different requirements and characteristics of the areas that were identified as project progressed. Each section is prefaced by a commentary from members of the Steering Group representing that particular community.

29 Section 8 - contains two tables. The first reports on A levels taken in the FE sector including a breakdown of grade achievement. The second table describes participation in 14-19 Diplomas in the FE and Skills sector.

30 Section 9 - summarises the contribution made by the FE and Skills sector in terms of number of learners taking each of the four STEM areas and the size of the programme of learning being taken by the learner.

31 Section 10 – responds to the workforce questions posed by the project.

32 Section 11 - describes what is available electronically with guidance on how to interrogate the data.

Acknowledgements

33 The project has been an exemplar of cost-effective and valuable government / community collaboration, involving substantial voluntary effort from STEM community members. The particular contribution made by

Matthew Harrison of the Royal Academy of Engineering
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Lee Dixon and Graham Keyse from IfL
Chitro Ghose and Zeeshan Rahman from LLUK

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Note: Any queries regarding the technical aspects of the report should be addressed to Matthew Harrison: Director of Education, The Royal Academy of Engineering
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Section 2: The Classification of S,T,E,M qualifications

34 An early task was to identify which qualifications offered by the FE and Skills sector could be classified as addressing a STEM-related discipline. This required the formulation of selection criteria and of a working definition of what would make a qualification relevant to the STEM agenda.

35 The operational definition and set of criteria, ratified by the Steering Group, are given below.

Definition of STEM qualification

36 *Whilst we acknowledge that 'STEM' is open to interpretation there is broad agreement that S, T, E and M learning (Science, Technology, Engineering, and Mathematics) is important to the national economy. In developing a list of qualifications the working group followed the following working principles:*

For the purposes of this project:

- STEM qualifications contain learning outcomes that are deeply rooted in science or mathematics, engineering and/or are of a 'technical' or 'technology-application/use' nature.*
- STEM qualifications are deemed distinct from other qualifications because they can, for those who wish it, provide the required foundation for progression into further study or employment in a STEM-related field.*
- To take account of the modular nature of some qualifications, they are deemed to lie within STEM when the majority of the assessment objectives are Science, Technology, Engineering or Mathematics focused (and /or the qualification is recognised as a pre-requisite for progression in STEM).*
- They are deemed to be 'STEM-related' when Science, Technology, Engineering or Mathematics features in many learning objectives (and / or the qualification provides a degree of learning that will aid progression in STEM).*
- They are deemed to be 'outside STEM' if STEM does not feature in at least some learning objectives for all learners (not just those who take STEM-related options within the qualification).*

37 These working principles were used to identify more than 9,000 science, technology, engineering or mathematics (S,T,E or M) related qualifications from over 20,000 available qualifications that were listed the National Database of Accredited Qualifications (NDAQ) (from 25 October 2010 the Register of Regulated Qualifications) and Learning Aim Database (LAD).

38 The list of identified qualifications was then classified as Science, Technology, Engineering or Mathematics by members of the Steering Group. Further details on how qualifications have been assigned to each of the S,T,E, and M areas are provided in the relevant section of this report (sections 4 to 7).

39 In terms of the qualifications that were reviewed, whilst it is acknowledged that there are many valuable qualifications taken in non tertiary education and training which do not attract public funding, the remit of the project was to report on publicly funded provision in the FE and Skills sector and how this compares with equivalent provision in the Schools sector. Furthermore, the focus of the project was on qualifications at QCF/NVQ levels 2 and 3.

40 Nevertheless, the electronic presentation does include qualifications at all levels from Entry to level 6 as well as non-funded qualifications that have been taken in the FE and Skills sector for the academic years 2007/08 through to 2009/10.

41 During the classification process, it became evident that qualifications could be readily assigned to more than one area. However, it was also recognised that if the majority of qualifications were assigned to multiple areas, then it would be difficult to interpret the data. For example, while mathematics is intrinsic to most qualifications relevant to the STEM education and training, reporting all the qualifications as 'Mathematics' would not aid assessment of the extent the FE and Skills sector is contributing to the development of Mathematics capabilities within the population or economy. Therefore, the classification attempted to limit multiple assignments of qualifications to those that could directly support learner progression in more than one area.

42 The outcome of the classification is summarised in Tables 2.1 and Table 2.2 for the FE and Skills sector in England for the academic years 2008/09 and 2009/10.

43 The aim of this work is to help the STEM community assess the scale and scope of the contribution of the FE and Skills sector to STEM education and training. The resultant list of qualifications and their classification should not be taken as any definition of STEM, STEM subjects or STEM qualifications.

44 A qualification is described differently if it has a different reference number in the two qualification databases used to identify the STEM qualifications. Therefore, the 3,000 (approx) different qualifications in S,T,E or M that are taken by publicly funded learners in the FE and Skills sector in England in any one year, as reported in Table 2.1, reflects that a given qualification can be revised over time and that similar qualifications are offered by different awarding bodies. Qualifications taken in the FE and Skills sector are revised every three to five years, so qualifications taken in any one year may therefore include recently introduced, expiring and expired but within last certification period versions of the same qualification. An example of the latter is that there are 15 awarding bodies offering Key Skills Application of Number - level 2, and each will have different reference number, although the learning outcome is the same or very similar. In the remainder of the report qualifications are grouped by qualification title to avoid this issue.

45 Table 2.2 provides further detail of these different qualifications by QCF level and S, T, E and M core and related classification, and describes the extent qualifications were assigned to more than one of the S, T, E or M areas.

46 An example may help to further explain the data: In Table 2.2, 186 different qualifications at QCF/NVQ level 3 taken in academic year 2008/09 were identified as solely 'Technology' qualifications. There were also qualifications associated with both Technology and Engineering (mainly ICT qualifications but also qualifications such as 'Professional Diploma in Audio Recording'). Thus, at QCF level 3 there were 155 different Technology qualifications taken that year that had also been classified as Engineering qualifications. A further 4 different Technology qualifications at level 3 were also classed as 'Engineering related' and a further 4 qualifications were classified as relevant to Science and Engineering as well as Technology. While the example is based on qualifications taken in 2008/09, the data indicate that the numbers of different qualifications taken in S, T, E or M subjects do not vary greatly between 2008/09 and 2009/10.

47 The figures in Table 2.1 and Table 2.2 **relate to the number of different qualifications being taken in the FE and Skills sector, not the numbers of learners taking each different qualification.** Furthermore, qualifications vary substantially in size so drawing simple comparisons on the number of different qualifications taken at colleges or in the workplace would be inappropriate.

48 In the electronic presentation it is possible to review the qualifications by type of qualification, e.g. GCE A levels or BTEC National Diplomas. Annex B describes the different type of qualifications that have been identified as STEM related qualifications.

Table 2.1: Numbers of different qualifications taken in S, T, E and M in FE and Skills sector in England

QCF/NVQ level	2008/09			2009/10		
	college based	at workplace	Overall	college based	at workplace	Overall
Entry	137	5	137	124	18	124
1	311	44	318	324	77	330
2	576	300	697	552	340	684
3	921	354	1,077	858	355	1,033
4 and above	215	32	230	165	34	184
No level assigned	135	7	137	95	17	98
Total	2,295	742	2,596	2,118	841	2,453

N¹ rated qualifications excluded

Notes

1. All data refer to qualifications taken in that academic year in FE and Skills sector in England by learners funded by the Learning Skills Council and for 2009/10 by the Skills Funding Agency or Young People's Learning Agency.
2. Data are from 2008/09 ILR L05, ILR C05, ILR U05 and ILR WBL p15, and for 2009/10 ILR L04, ILR C04, ILR U03 and ILR WBL p12.
3. A qualification is classified as distinct if it has a unique reference number in NDAQ and/or LAD qualification databases.
4. Data cover all age groups in 'FE colleges', independent providers, third sector providers and employers.
5. 'College based' include qualifications predominantly taken at an education provider and includes General Further Education Colleges including Tertiary, Sixth Form Colleges, Special College - Agricultural and Horticultural Colleges and Art and Design Colleges, Specialist Colleges and External Institutions.
6. 'at workplace' refers to qualifications where the majority of learning and learning support occurs at the individual's place of employment, and this is typically provided by independent providers and employers training their own staff.
7. 'Overall' refers to overall number of qualifications – this is not the total of 'college based' and 'at workplace' as some qualifications are common to both areas.

Table 2.2: Number of different qualifications taken in FE and Skills sector in England by QCF/NVQ level and STEM Classification

	Entry		Level 1		Level 2		Level 3		Level 4 and above		No level assigned	
	2008/09	2009/10	2008/09	2009/10	2008/09	2009/10	2008/09	2009/10	2008/09	2009/10	2008/09	2009/10
Science	4	13	16	31	87	100	327	311	31	20	7	7
Science related	0	0	1	1	14	10	8	7	4	4	0	0
Mathematics	0	0	10	7	32	28	53	50	6	4	1	0
Mathematics related	0	0	14	13	35	40	46	46	13	11	7	5
Numeracy	82	56	34	29	25	24	0	0	0	0	6	5
Science/ Mathematics or Maths related or with Numeracy	0	0	4	1	6	4	6	5	3	0	4	4
Science related/ Mathematics or Maths related or with Numeracy	0	0	0	0	0	0	0	0	0	0	0	0
Technology	3	2	26	27	89	80	186	178	63	51	6	1
Technology related	33	39	128	132	163	165	151	142	21	12	53	42
Engineering	13	11	82	80	248	217	406	386	150	124	15	9
Engineering related	5	5	39	40	102	113	85	90	9	8	52	34
Technology / Engineering	3	2	20	22	75	68	155	151	57	46	5	0
Technology / Engineering related	0	0	4	3	6	5	4	3	2	1	0	0
Technology related/ Engineering related	0	0	1	3	5	4	3	3	0	0	1	1
Technology or Engineering with Mathematics related	0	0	0	0	0	0	0	0	0	0	0	0
Science / Engineering or Eng related	0	0	1	1	3	7	12	12	3	2	0	0
Science/ Technology / Engineering	0	0	0	0	1	2	4	5	0	0	0	0

Notes

1. All data refer to qualifications taken in that academic year in FE and Skills sector in England by learners funded by the Learning Skills Council and for 2009/10 by the Skills Funding Agency or Young People's Learning Agency.

See for Table 2.1 for other notes relevant to this table

Section 3: Overview of S, T, E and M qualifications in the FE and Skills sector

49 A summary of the total numbers of science, technology, engineering and mathematics qualifications taken in the FE and Skills sector in England is presented in Table 3.1. The numbers for qualifications in Science, Technology, Engineering or Mathematics are presented separately in Table 3.2.1 through to Table 3.2.4. Numbers refer to the number of separate qualifications being taken not the numbers of learners, as an individual may take more than one qualification at a time. All tables cover the academic years 2007/08 to 2009/10.

50 These are the only tables that contain data on the FE and Skills sector contribution for academic year 2007/08. In subsequent tables either data for year 2008/09 are used exclusively, or described with data from 2009/10 where this is appropriate. This is because that the data from 2008/09 onwards cannot be compared directly to data from 2007/08 or to previous years due to changes in how qualifications were funded in the sector and changes in how various outcome measures were calculated.

51 The three main outcome measures reported for qualifications taken in the FE and Skills sector:

- Enrolments (Enrols): this is the most inclusive measure and it is the number of learners taking that qualification in that academic year at the census point as specified in the data collections for that year. It includes learners who started their study of the qualification in that academic year and those who are continuing their studies from previous years.
- Completions (Completes): the number of learners who completed their studies of that qualification in that academic year, for example all learners who completed the qualification 'GCE A level in Physics' in 2008/09.
- Achievements (Achieves): the number of learners who achieved a successful learning outcome in that qualification in that academic year, for example all learners who achieved an A to E grade in 'GCE A level in Physics' in 2008/09.

52 These multiple outcome measures facilitate comparison with other published data. For example Schools data only report Completions and Achievements whereas data on Higher Education have numbers for Enrolments. Enrolments are reported in sector Qualification Success rates. However, it is not possible to calculate success rates (i.e. the proportion of those enrolled achieving) from the data presented as it is 'within year' data, and therefore those completing a qualification are not necessarily the same individuals who are enrolled on the qualification in that year if it is a qualification taken over a number of years.

53 Two further measures are included for completeness:

- Withdrawals and Transfers: the number of learners who did not complete their studies of that qualification. In the sector, Transfers are counted as a 'withdrawal' from one qualification and a 'start' for another qualification, to avoid double counting, as the learner will often receive a new registration number as they start the new qualification.
- Continuers: the number of learners who are expected to continue their studies of that qualification in the next academic year.
- The number of Completions plus Withdrawals and Transfer plus Continuers equals the number of Enrolments in any given year.

54 While 'exact' figures are used throughout this report, the data have an accuracy of no more than +/- 1%, particularly for the smaller data values. This level of accuracy is comparable with other published data on the FE and Skills sector where figures are rounded to nearest 100, and outcomes of less than 50 are not displayed. The inaccuracies are predominantly due to changes in how data are defined, which have resulted from changes in funding and provision type, the accuracy of the collected data, and changes in the calculation of outcomes which occur on an ongoing basis both within and across academic years.

55 Detailed notes on the sources of data, the derivation of variables, and qualifiers regarding the data are provided with Table 3.1. Nevertheless, it should be noted that it is not possible to aggregate data from each of the four STEM areas: this is because a substantial number of qualifications are assigned to more than one of the areas, for example most IT/ICT qualifications have been classed as relevant to Engineering as well as Technology.

Notes on the scale of the contribution to STEM made by the FE and Skills sector

The number of STEM options available to learners

Table: 2.1 shows that of the 2,453 different STEM and STEM related qualifications taken in the FE & Skills sector in England in 2009/10; 184 (8%) were at Level 4 and above, 1033 (42%) were at Level 3, 684 (28%) were at Level 2 and 222 (22%) were at Levels below 2 (or not assigned any QCF level).

Inputs to STEM

Table: 3.1 shows that in 2009/10, there were 2,839,046 enrolments on STEM qualifications in the FE and Skills sector in England. 8% were at entry level, 26% at Level 1, 39% at Level 2, 26% at Level 3, 1% at Level 4+. 73% are at or below Level 2.

STEM outputs

Table 3.1 shows that in 2009/10 699,082 (25%) of STEM qualifications were delivered in the work environment.

Tables 3.2.1 to 3.2.4. show that of the STEM qualifications taken in 2009/10, 12% were science or science related, 27% were technology or technology related, 24% were Engineering or Engineering related and (42%) were Mathematics, Mathematics related or in Numeracy. The figures sum to 105% because 5% of the qualifications taken relate to more than one of the STEM areas.

Tables 3.2.1 to 3.2.4. show that of the qualifications taken in 2009/10 at Level 4+; 2% were Science or Science related, 4% were Technology or Technology related, 23% were Engineering or Engineering related and 74% were Mathematics or Mathematics related, with 3% of the total being combinations of S, T, E or M

At Level 3 the proportions were: 31% Science (and related), 30% Technology (and related), 38% Engineering (and Engineering related), 14% Mathematics (and Mathematics related) with 13% of the total being combinations of S, T, E, M.

At Level 2 the proportions were: 8% Science (and related), 25% Technology (and related), 30% Engineering (and Engineering related), 42% Mathematics (and Mathematics related and Numeracy) with 5% of the total being combinations of S, T, E, M.

At Levels below 2 (or not assigned any level) the proportions were: 2% Science (and Science related), 28% Technology (and Technology related), 6% Engineering (and Engineering related), 65% Mathematics (and Mathematics related and Numeracy) with 1% of the total being combinations of S, T, E, M.

Tables: 3.2.1-3.2.4 show the number of qualifications achieved in 2008/09 (the last year for which full results are known).

- There were 223,653 achievements in Science and related (30% at or below Level 2)
- There were 506,517 achievements in Technology and related (72% at or below Level 2).
- There were 412,134 achievements in Engineering and related (64% at or below Level 2)
- There were 862,761 achievements in Mathematics and related and numeracy (92% at or below Level 2)

Tables 4.1.1, 4.2.1 (and their equivalents in section 5 and 6) show that there were 170,000 (approx) Apprenticeships underway in 2008/09. 48% were at Level 2. 4% were in Science, 9% in Technology, 81% in Engineering and 6% related to Mathematics.

Table 4.4 shows that in 2008/09, 20% of Physics A Levels were achieved in the FE Sector (24% of Chemistry and 24% of Biology A Levels).

Table 7.4 shows that in 2008/09, 24% of Mathematics A Levels were achieved in the FE Sector (15% of Further Mathematics A Levels).

Tables 9.1 to 9.8 show that in 2009/10 of the learners taking full Level 2 or full (or over full) Level 3 qualifications in the FE and Skills sector, 156,248 were in Science, 88,695 in Technology, 357,418 in Engineering and 125,587 in Mathematics.

STEM teaching staff

Table 10.1 shows that in 2008/09 there were 69,180 staff teaching in STEM related areas.

Table 3.1: **Summary** of the number of enrolments in S, T, E and M qualifications in the FE and Skills sector in England

QCF/NVQ level	2007/08			2008/09			2009/10		
	college based	at workplace	Total	college based	at workplace	Total	college based	at workplace	Total
Entry	212,296	570	212,866	256,942	78	257,020	220,609	54	220,663
1	639,147	241,540	880,687	655,841	222,521	878,362	495,708	240,200	735,908
2	823,772	442,393	1,266,165	1,011,098	314,880	1,325,978	804,948	303,537	1,108,485
3	565,160	164,791	729,951	584,939	154,590	739,529	593,492	153,084	746,576
4 and above	11,223	477	11,700	14,199	226	14,425	12,524	1,552	14,076
No level assigned	27,902	532	28,434	22,346	325	22,671	12,683	655	13,338
Total	2,279,500	850,303	3,129,803	2,545,365	692,620	3,237,985	2,139,964	699,082	2,839,046

Notes:

1. All data refer to qualifications taken in that academic year in the FE and Skills sector in England by learners funded by the Learning Skills Council and for 2009/10 the Skills Funding Agency or Young People's Learning Agency.
2. Data are from 2008/09 ILR L05, ILR C05, ILR U05 and ILR WBL p15, and for 2009/10 ILR L04, ILR C04, ILR U03 and ILR WBL p12, f 2007/08 ILR F05, ILR C05, ILR U05, ILR NES and WBL W13 Final
3. For all data on qualifications, the qualifications rated 'N' have not been included in counts or aggregations.
4. 'College based' include qualification predominantly taken at includes General Further Education Colleges including Tertiary, Sixth Form Colleges, Special College - Agricultural and Horticultural Colleges and Art and Design Colleges, Specialist Colleges and External Institutions.
5. 'at workplace' refers to qualifications where the majority of learning and learning support occurs at the work, and this is typically provided by independent providers and employers training their own staff.
6. QCF/NVQ 4 and above includes all qualifications taken in the FE and Skills sector that range in QCF levels from 4 through to 7. While some of these qualifications are reported in HESA data they have been included for completeness.
7. QCF levels have been retrospectively applied through the STEM lookup to qualifications listed in the LAD database

Table 3.2.1 : **Science** : numbers of qualifications being taken in the FE and Skills sector in England

	QCF/NVQ level	2008/09			
		Achievements	Completions	Withdws/ Transfers	Continues
Science	Entry	648	679	159	0
	1	2,851	3,037	822	140
	2	34,134	36,535	7,618	7,728
	3	154,347	176,628	25,064	18,930
	4 and above	121	158	31	223
	Not assigned	1,582	1,621	257	335
Total		193,683	218,658	33,951	27,356
Science related	1	14	14	0	0
	2	29,156	32,367	1,442	364
	3	785	932	54	47
	4 and above	15	33	2	6
Total		29,970	33,346	1,498	417
Overall Total		223,653	252,004	35,449	27,773

2007/08	2008/09	2009/10
Enrolments	Enrolments	Enrolments
568	838	1,229
3,831	3,999	17,984
44,485	51,881	60,642
213,529	220,622	234,176
275	412	229
3,025	2,213	2,947
265,713	279,965	317,207
0	14	5
33,448	34,173	30,463
1,061	1,033	731
73	41	37
34,582	35,261	31,236
300,295	315,226	348,443

see notes for Table 3.1

Table 3.2.2 : **Technology** : numbers of qualifications being taken in the FE and Skills sector in England

Technology	QCF/NVQ level	2008/09			
		Achievements	Completions	Withdws/ Transfers	Continues
Technology	Entry	943	1,055	216	10
	1	3,495	4,006	788	57
	2	17,523	19,658	3,985	1,449
	3	57,835	64,156	14,791	21,190
	4 and above	116	132	64	112
	Not assigned	85	101	7	3
Total		79,997	89,108	19,851	22,821
Technology related	Entry	37,380	43,561	8,614	2,548
	1	137,318	167,975	47,071	32,385
	2	167,768	206,195	54,537	54,703
	3	75,679	84,996	16,517	18,961
	4 and above	75	78	5	41
	Not assigned	8,300	9,086	1,024	1,054
Total		426,520	511,891	127,768	109,692
Overall Total		506,517	600,999	147,619	132,513

2007/08	2008/09	2009/10
Enrolments	Enrolments	Enrolments
1,405	1,281	1,300
3,697	4,851	4,732
24,363	25,092	26,494
92,489	100,137	107,749
367	308	299
79	111	2
122,400	131,780	140,576
66,073	54,723	54,102
310,635	247,431	202,648
347,377	315,435	247,424
134,394	120,474	115,856
336	124	199
15,053	11,164	4,191
873,868	749,351	624,420
996,268	881,131	764,996

see notes for Table 3.1

Table 3.2.3 : **Engineering** : numbers of qualifications being taken in the FE and Skills sector in England

Engineering	QCF/NVQ level	2008/09			
		Achievements	Completions	Withdws/ Transfers	Continues
Engineering	Entry	1,403	1,571	350	14
	1	25,417	27,790	6,693	764
	2	182,907	192,481	40,104	87,240
	3	133,612	144,470	32,039	99,856
	4 and above	1,390	1,602	292	1,451
	Not assigned	828	915	76	35
Total		345,557	368,829	79,554	189,360
Engineering related	Entry	4,865	5,214	991	133
	1	8,697	9,510	2,352	370
	2	39,740	40,637	8,143	18,779
	3	7,264	7,828	1,093	4,058
	4 and above	353	383	53	31
	Not assigned	5,658	5,857	271	244
Total		66,577	69,429	12,903	23,615
Overall Total		412,134	438,258	92,457	212,975

2007/08	2008/09	2009/10
Enrolments	Enrolments	Enrolments
3,105	1,935	2,989
47,307	35,247	28,720
310,190	319,825	272,039
271,310	276,365	269,736
2,352	3,345	2,951
812	1,026	569
635,076	637,743	577,004
4,970	6,338	6,892
9,755	12,232	13,781
68,149	67,559	55,310
12,774	12,979	12,626
683	467	307
5,469	6,372	5,942
101,800	105,947	94,858
736,876	743,690	671,862

see notes for Table 3.1

Table 3.2.4 : **Mathematics** : numbers of qualifications being taken in the FE and Skills sector in England

	QCF/NVQ level	2008/09				2007/08	2008/09	2009/10
		Achievements	Completions	Withdws/ Transfers	Continues	Enrolments	Enrolments	Enrolments
Mathematics	1	2,906	3,343	845	0	4,668	4,188	2,622
	2	208,213	240,214	56,761	66,845	317,275	363,820	389,979
	3	44,999	53,438	7,771	2,031	60,769	63,240	66,333
	4 and above	151	201	17	49	243	267	257
	Not assigned	4	5	0	0	0	5	5
Total		256,273	297,201	65,394	68,925	382,955	431,520	459,191
Mathematics related	1	10,588	13,875	2,020	180	15,048	16,075	15,201
	2	39,867	43,909	7,266	17,000	48,379	68,175	60,928
	3	20,318	25,106	4,078	4,875	31,228	34,059	35,175
	4 and above	4,116	6,030	928	2,933	7,779	9,891	10,124
	Not assigned	2,202	2,388	420	391	5,570	3,199	2,322
Total		77,091	91,308	14,712	25,379	108,004	131,399	123,750
Numeracy	Entry	111,415	150,337	29,326	13,523	489,827	193,186	155,451
	1	334,598	388,220	84,170	86,990	107,932	559,380	455,322
	2	82,858	104,513	8,835	11,249	1,412	124,597	11,755
	Not assigned	526	641	143	61	138,150	845	129
Total		529,397	643,711	122,474	111,823	737,321	878,008	622,657
Overall Total		862,761	1,032,220	202,580	206,127	1,228,280	1,440,927	1,205,598

see notes for Table 3.1

Sections 4-7: Science, Technology, Engineering and Mathematics Qualifications in the FE and Skills Sector

56 Sections 4, 5, 6 and 7 follow a similar format. After a short description of the Tables, there are notes on the content of the tables written by members of the Steering Group representing that area.

57 The tables in these four sections also follow the same format: tables describing the QCF/NVQ level 2 qualifications taken in the FE and Skills sector in England, tables describing the QCF/NVQ level 3 qualifications, and the tables putting the FE and Skills contribution at level 3 and level 2 in the context of the total number of these qualifications taken across the FE and Schools sector in England by 16 to 18 year olds.

58 In Tables 4.1 through to 4.2.1 all data refer to qualifications taken in FE and Skills sector in England at the specified QCF level by learners of all ages funded by the Learning Skills Council for academic year 2008/09 and by the Skills Funding Agency or Young People's Learning Agency for year 2009/10.

59 All the tables present the most popular qualifications taken in each area. 'Popular' has been defined arbitrarily as qualifications taken by one thousand or more learners across the FE and Skills sector in England. This has demonstrated to be a relatively robust criterion.

60 For each popular qualification, the five outcome measures, described previously, are reported for academic year 2008/09. For academic year 2009/10, data are only available to report the number of enrolments. To avoid any issues in reporting small numbers, only group totals are reported where the numbers of enrolments for individual qualification titles are less than 1000, with the qualifications being grouped according to the number of enrolments in each qualification title.

61 In these, as in other, tables 'Continues' refers to learners who are continuing studying the qualification in subsequent years, not those who started studying in previous years, and Transfers cannot be distinguished from Withdrawals within the data, as learners who transfer from one qualification to another are treated as withdrawing from one qualification and starting a new qualification to avoid double counting.

62 The project was asked to report on the numbers of apprenticeships being taken in the sector. As apprenticeships are programmes of learning containing a number of qualifications, allocating such programmes to a specific subject area such as Engineering can be problematic, as the same programme can contain different qualifications and different programmes can contain the same qualification. To provide an indication of numbers of Apprenticeships and Advanced Apprenticeships being taken in the FE and Skills sector a surrogate has been used: for example, in the case of Engineering, the number of Engineering NVQs being taken as part of an Apprenticeship or Advanced Apprenticeship (Table 6.1.1 and Table 6.2.1 respectively). In this instance a qualification (NVQ) is a reasonable surrogate

for an individual, as only one level 2 NVQ is taken in an Apprenticeship and only one level 3 NVQ is taken in an Advanced Apprenticeship. Further details on the apprenticeships and the other qualifications that are taken in apprenticeships are available in the electronic presentation.

63 It should be noted when reviewing the tables that qualifications have been grouped according to qualification title by QCF level. For example, the number of enrolments reported for GCE A level Physics describes number of Physics A levels that have been taken, irrespective of variant or Awarding Body. This reduces the number of different qualifications described in section 2 by approximately 25%, and increases the number of learners counted against a qualification by a similar amount.

64 As the data are 'within year' data it is not possible to calculate retention or achievement rates as many of the qualifications are taken over more than one year. Therefore, the number of 'within year' 'Enrols' describes learners who are continuing their studies from previous years as well as those who started that qualification in that academic year, and thus are usually substantially higher than the 'within year' 'Completes' and 'Achieves'. Qualification success rates are calculated using the cohort of learners expected to complete in that academic year. It is possible that the number of completes and achieves for a qualification are different for 'within year' data and cohort data due to early completers or late completers from other cohorts being in the 'within' year data.

65 Given that achievement and retention rates are of interest, but can not be calculated from the data, Achievement/ Enrolment percents for each listed qualification title are provided. These rates have been derived from the data used for the published Qualification Success Rates for 2008/09, and as such are only available for Learner responsive provision. The number of 'Enrols' and 'Achieves' used in the calculation are included in the tables to allow the reader to assess whether a meaningful comparison can be made.

66 Tables 4.3 and 4.4 compare the numbers of 'popular' qualifications taken by 16 to 18 year old in the FE and Skills sector with the numbers of these qualifications taken across the FE and Skills sector and in Schools for academic year 2008/09. The data for 'FE only' are the ILR data, for schools data from the Key Stage 5 SFR were used where this could be directly compared. In all other cases the data came from the Award data in the Young Persons Matched data set.

67 While detailed notes are provided with these tables, it should be noted that data on enrolments are not available for schools; however, enrolments have been retained to allow comparison with data on all age groups in Table 4.1 and Table 4.

Section 4: Science Qualifications in the FE and Skills Sector

Notes on the Science Tables

Rationale for categorisation

Qualifications were identified as Science on the following basis:

- Qualifications containing identifiable scientific content, whether they contribute wholly or partly to progression in Science are deemed to be within the definition of a Science qualification. In this context progression leads to further study of science as a discipline or an occupation that is primarily concerned with increasing our knowledge of the natural world.

For reporting purposes a single classification 'Science' has been used for all qualifications that have mandatory components in science. The impact of a narrower definition of 'Science' could be analysed using the electronic presentation of the data.

A possible exception could be qualifications in Food Safety, Food Processing and Manufacture, which could be regarded as 'Science related', as the majority of these qualifications would not lead to progression in Science.

For Science, level 1 and below qualifications often are not sufficient in themselves to lead to progression in Science.

All Tables in this section other than Tables 4.3 and 4.4 refer only to qualifications taken in the specified academic year in the FE and Skills sector in England by publicly funded learners. Tables 4.3 and 4.4 include additional data about qualifications taken by 16-19 year olds in schools in England.

NVQs taken as part of a Science Apprenticeship (QCF Level 2) and Advanced Apprenticeship (QCF Level 3) are listed in Tables 4.1.1 and 4.2.1. As usually only one NVQ is taken as part of an Apprenticeship or Advanced Apprenticeship, these NVQ numbers can be taken as a proxy for the number of Apprentices coming through training.

Example top-line numbers:

- 32,899 Science qualifications achievements in the FE and Skills sector at Level 2 in 2008/09
- 154,347 Science qualifications achievements in the FE and Skills sector at Level 3 in 2008/09
- 2,636 (approx) Science-based Apprenticeships were being taken in 2008/09
- 4,131 (approx) Science-based Advanced Apprenticeships were being taken in 2008/09.
- Table 4.4 shows that in 2008/09, 20% of Physics A Levels were achieved in the FE and Skills Sector (24% of Chemistry and 24% of Biology A Levels).

Science level 2

Table 4.1: Popular qualifications in the Science classification at QCF/NVQ level 2¹

Level 2		2008/09						2009/10		Achievements/ Enrolments as % for Learner Responsive Provision (2008/09 cohort)			
S, T, E, M Area	Qualification title	N of Qualls ²	Achieves	Completes	Withdws/ Transfers	Continues	Enrols	N of Qualls	Enrols	Base Enrols	Achieves ⁵	Rate	
Science	NVQ in Food Manufacture		8,633	8,685	1,304	4,554	14,543		13,342	299	240	80.3%	
	GCSE Science		4,903	5,086	1,107	11	6,204		6,683	6,199	4,903	79.1%	
	GCSE Biology		2,930	3,028	633	4	3,665		3,698	3,665	2,930	79.9%	
	GCSE Psychology		2,086	2,358	887	6	3,251		3,192	3,232	2,075	64.2%	
	Certificate in Horticulture		1,139	1,595	356	487	2,438		2,086	2,386	1,139	47.7%	
	BTEC First Diploma in Animal Care		1,825	1,902	490	9	2,401		2,893	2,400	1,825	76.0%	
	GCSE Human Physiology and Health		1,413	1,553	544	4	2,101		1,985	2,101	1,413	67.3%	
	BTEC First Diploma in Applied Science		1,212	1,392	283	3	1,678		1,996	1,678	1,212	72.2%	
	NVQ in Animal Care		498	518	169	714	1,401		765	326	122	37.4%	
	NVQ in Veterinary Nursing		550	556	67	581	1,204		1,194	-	-	-	
	Certificate in Veterinary Nursing Theory		702	728	54	410	1,192		1,017	249	161	64.7%	
	GCSE Chemistry		963	981	189	0	1,170		1,173	1,170	963	82.3%	
	GCSE Physics		853	899	174	1	1,074		1,073	1,074	853	79.4%	
	Diploma in Work-based Horticulture (QCF)						<1000 ⁴		2,662				
	Certificate in Healthy Eating and Food Hygiene						<1000		2,061				
	Diploma in Hybrid Vehicle Introduction and Environmental Improvements (NVQ) (QCF)						<1000		1,910				
	GCSE Additional Science						<1000		1,084				
	Certificate in Environmental Sustainability						<1000		1,790				
	Science	Qualifications with 1000 or more enrolments	13	27,707	29,281	6,257	6,784	42,322	16	58,721			
		Qualifications with 100 to 999 enrolments	28	4,455	5,407	1,219	2,561	9,187	26	7,580			
	Qualifications with fewer than 100 enrolments	35	737	1,161	226	229	1,616	34	1,482				
Total		76	32,899	35,849	7,702	9,574	53,125	76	67,783				
Science related	Award in Food Safety in Catering		13,200	14,804	1,016	239	16,059		<1000 ⁴				
	Award in Food Safety in Catering (QCF)		14,277	15,260	380	123	15,763		29,008				
Science related	Qualifications with 1000 or more enrolments	2	27,477	30,064	1,396	362	31,822	1	29,008				
	Qualifications with 100 to 999 enrolments	5	1,663	2,281	42	2	2,325	4	1,440				
	Qualifications with fewer than 100 enrolments	1	16	22	4	0	26	2	15				
Total		8	29,156	32,367	1,442	364	34,173	7	30,463				

Table 4.1.1: Science classified NVQs taken as part of an Apprenticeship (Level 2)³

Level 2		2008/09						2009/10	
S, T, E, M Area	Qualification title	N of Qualls ²	Achieves	Completes	Withdws/ Transfers	Continues	Enrols	N of Qualls	Enrols
Science	NVQ in Veterinary Nursing		476	477	49	478	1004		953
	NVQ in Animal Care		304	305	97	450	852		<500
	NVQ in Food Manufacture		202	202	96	294	592		848
Science	Qualifications with 500 or more enrolments	3	982	984	242	1,222	2,448	2	1,801
	Qualifications with fewer than 500 enrolments	4	85	85	11	92	188	5	636
Total		7	1,067	1,069	253	1,314	2,636	7	2,437
Science related		0	0	0	0	0	0	0	0
Total		7	1,067	1,069	253	1,314	2,636	7	2,437

Science level 3

Table 4.2: Popular qualifications in the Science classification at QCF/NVQ level 3¹

Level 3		2008/09						2009/10		Achievements/ Enrolments as % for Learner Responsive Provision (2008/09 cohort)		
S, T, E, M Area	Qualification title	N of Quals ²	Achieves	Completes	Withdws/ Transfers	Continues	Enrols	N of Quals	Enrols	Base Enrols	Achieves ⁵	Rate
Science	GCE AS Level Psychology		27,131	33,274	5,518	25	38,817		40,873	38,797	27,128	69.9%
	GCE AS Level Biology		17,586	22,562	3,294	22	25,878		27,010	25,877	17,585	68.0%
	GCE A Level Psychology		18,061	18,658	1,162	13	19,833		20,561	19,820	18,056	91.1%
	GCE AS Level Chemistry		12,752	15,909	2,137	23	18,069		19,439	18,068	12,751	70.6%
	GCE A Level Biology		11,531	12,086	641	5	12,732		13,749	12,720	11,521	90.6%
	GCE AS Level Physics		8,096	10,055	1,615	7	11,677		12,715	11,677	8,096	69.3%
	GCE A Level Chemistry		8,846	9,262	439	8	9,709		10,305	9,704	8,841	91.1%
	GCE AS Level Geography		7,534	8,623	797	3	9,423		9,371	9,423	7,534	80.0%
	GCE A Level Physics		5,062	5,342	284	2	5,628		6,000	5,626	5,060	89.9%
	GCE A Level Geography		5,174	5,222	182	1	5,405		5,680	5,401	5,170	95.7%
	BTEC National Diploma in Sport and Exercise Sciences		2,124	2,186	797	2,336	5,319		5,426	5,318	2,123	39.9%
	BTEC National Diploma in Animal Management		1,857	1,897	834	2,412	5,143		6,011	5,143	1,857	36.1%
	BTEC National Diploma in Applied Science		1,461	1,547	831	2,081	4,459		5,411	4,459	1,461	32.8%
	NVQ in Dental Nursing		929	946	369	2,356	3,671		4,419	241	83	34.4%
	Diploma in Anatomy and Physiology		2,780	2,902	466	43	3,411		1,757	3,402	2,780	81.7%
	Award in Dental Nursing		1,266	1,291	223	1,454	2,968		3,642	499	281	56.3%
	BTEC National Diploma in Horse Management		632	651	320	731	1,702		1,649	1,702	632	37.1%
	GCE AS Level Geology		1,281	1,417	169	0	1,586		1,552	1,586	1,281	80.8%
	BTEC National Award in Applied Science		755	877	302	323	1,502		2,478	1,496	750	50.1%
	GCE AS Level Electronics		1,058	1,245	249	1	1,495		1,512	1,495	1,058	70.8%
	Access to Higher Education Diploma: Science		927	1,047	327	111	1,485		1,936	1,485	927	62.4%
	BTEC National Diploma in Beauty Therapy Sciences		657	673	240	536	1,449		1,203	1,449	657	45.3%
	International Baccalaureate Diploma		512	583	181	669	1,433		1,509	1,433	512	35.7%
	BTEC National Certificate in Applied Science		493	523	326	550	1,399		1,494	1,339	481	35.9%
	GCE AS Level Applied Science		643	928	260	0	1,188		1,453	1,187	642	54.1%
	GCE AS Level Environmental Studies		824	1,018	131	0	1,149		2,059	1,149	824	71.7%
	BTEC National Award in Animal Management		904	951	151	29	1,131		1,090	1,131	904	79.9%
	GCE AS Level Environmental Science		749	966	124	1	1,091		<1000 ⁴	1,091	749	68.7%
	NVQ in Veterinary Nursing		465	471	37	549	1,057		1,108	105	59	56.2%
	BTEC National Award in Sport and Exercise Sciences		820	856	142	33	1,031		1,208	1,026	815	79.4%
	Certificate in Veterinary Nursing Theory		569	578	18	425	1,021		1,017	238	129	54.2%
	GCE AS Level Archaeology		745	868	131	1	1,000		<1000 ⁴	1,000	745	74.5%
BTEC National Certificate in Pharmacy Services						<1000 ⁴		1,186				
BTEC National Diploma in Agriculture						<1000		1,046				
Science	Qualifications with 1000 or more enrolments	32	144,224	165,414	22,697	14,750	202,861	32	215,869			
	Qualifications with 100 to 999 enrolments	38	8,823	9,692	2,041	3,870	15,603	46	16,756			
	Qualifications with fewer than 100 enrolments	71	1,300	1,522	326	310	2,158	68	1,551			
Total		141	154,347	176,628	25,064	18,930	220,622	146	234,176			
Science realted	Qualifications with 1000 or more enrolments	0	0	0	0	0	0	0	0			
	Qualifications with 100 to 999 enrolments	3	752	894	54	47	995	1	636			
	Qualifications with fewer than 100 enrolments	1	33	38	0	0	38	2	95			
Total		4	785	932	54	47	1,033	3	731			

Science level 3

Table 4.2.1: Science classified NVQs taken as part of an Advanced Apprenticeship (Level 3)³

Level 3		2008/09						2009/10	
S, T, E, M Area	Qualification title	N of Quals ²	Achieves	Completes	Withdraws/ Transfers	Continues	Enrols	N of Quals	Enrols
Science	NVQ in Dental Nursing		564	563	208	1,747	2,518		3,247
	NVQ in Veterinary Nursing		356	356	33	453	842		873
	NVQ in Oral Healthcare: Dental Nursing		443	443	70	79	592		<500
Science	Qualifications with 500 or more enrolments	3	1,363	1,362	311	2,279	3,952	2	4,120
	Qualifications with fewer than 500 enrolments	5	48	49	17	113	179	5	324
Total		8	1,411	1,411	328	2,392	4,131	7	4,444
Science related		0	0	0	0	0	0	0	0
Total		8	1,411	1,411	328	2,392	4,131	7	4,444

Notes for Table 4.1 to Table 4.2.1

- Data are from 2008/09 ILR L05, ILR C05, ILR U05 and ILR WBL p15, and for 2009/10 ILR L04, ILR C04, ILR U03 and ILR WBL p12.
Data cover all age groups in 'FE colleges', independent providers, third sector providers and employers.
'FE colleges' includes General Further Education Colleges including Tertiary, Sixth Form Colleges, Special College - Agricultural and Horticultural Colleges and Art and Design Colleges, Specialist Colleges and External Institutions.
- 'N of Quals' refers to the number of different qualification titles.
- All apprenticeships taken during 2008/09 and 2009/10 included an NVQ
- "<1000" indicates where there were less than 1000 enrolments within that qualification title in that year across of the FE and Skills sector.
However, numbers of enrolments, etc. for that qualification title are still counted in appropriated sub group total, e.g. 'Qualifications with 100 to 999 enrolments'.
- "-" indicates that there were <50 achieves in learner responsive provision in qualifications with that qualification title

Science level 2 (FE and Schools)

Table 4.3: QCF Level 2 Science qualifications with over 1000 Enrolments taken in FE compared to numbers taken in FE and Schools in England in 2008/09¹

FE only 16-18 ¹⁰					FE and Schools 16-18 ¹⁰		
Science	Qualification title	Enrols	Completes	Achieves	Completes	Achieves	% Completes in FE/ FE & Schools ¹¹
Science	BTEC First Diploma in Animal Care	2,161	1,734	1,667	1,869	1,869	93%
	BTEC First Diploma in Applied Science	1,348	1,136	1,005	8,960	8,959	13%
	GCSE Biology	2,233	1,833	1,781	91,233	90,955	2%
	GCSE Human Physiology and Health	1,215	861	763	2,657	2,370	32%
	GCSE Psychology	2,221	1,650	1,465	7,779	7,335	21%
	GCSE Science	3,900	3,148	3,034	481,211	472,399	1%
Science related	Award in Food Safety in Catering	5,933	5,637	5,251	^a na	na	na
	Award in Food Safety in Catering (QCF)	5,216	4,990	4,616	^a na	na	na

Science level 3 (FE and Schools)

Table 4.4: QCF Level 3 Science qualifications with over 1000 Enrolments taken in FE compared to numbers taken in FE and Schools in England in 2008/09¹

FE only ² 16-18 ⁴					FE and Schools ³ 16-18 ⁴		
Science	Qualification title ⁵	Enrols	Completes ⁶	Achieves	Completes ⁷	Achieves	% Completes in FE/ FE & Schools ⁸
Science	BTEC National Award in Applied Science	1,324	753	648	977	977	77%
	BTEC National Certificate in Applied Science	1,109	378	356	499	499	76%
	BTEC National Diploma in Animal Management	4,390	1,542	1,508	1,597	1,597	97%
	BTEC National Diploma in Applied Science	3,704	1,143	1,077	1,120	1,120	102%
	BTEC National Diploma in Beauty Therapy Sciences	1,201	526	516	534	534	99%
	BTEC National Diploma in Horse Management	1,583	602	585	614	614	98%
	BTEC National Diploma in Sport and Exercise Sciences	5,012	2,023	1,967	2,101	2,101	96%
	GCE A Level Biology	11,880	11,334	10,868	46,504	44,628	24%
	GCE A Level Chemistry	8,932	8,563	8,219	35,938	34,697	24%
	GCE A Level Geography	5,275	5,107	5,058	27,702	27,442	18%
	GCE A Level Physics	5,308	5,061	4,816	25,273	24,155	20%
	GCE A Level Psychology	18,833	17,800	17,280	48,810	47,480	36%
	GCE AS Level Applied Science	1,167	916	635	2,960	2,101	31%
	GCE AS Level Biology	24,615	21,588	16,841	63,190	50,301	34%
	GCE AS Level Chemistry	17,094	15,124	12,138	46,094	38,061	33%
	GCE AS Level Electronics	1,467	1,225	1,042	1,697	1,414	72%
	GCE AS Level Environmental Science	1,054	938	727	^a na	na	na
	GCE AS Level Environmental Studies	1,121	995	805	2,440	1,891	41%
	GCE AS Level Geography	9,300	8,528	7,457	30,698	27,294	28%
	GCE AS Level Geology	1,558	1,393	1,257	1,899	1,712	73%
	GCE AS Level Physics	11,261	9,725	7,832	33,874	27,836	29%
	GCE AS Level Psychology	37,299	32,142	26,275	72,076	57,754	45%
	International Baccalaureate Diploma	1,403	570	503	3,181	2,805	18%

Science

Notes for Table 4.3 and Table 4.4.

1. All data refer to qualifications taken in that academic year 2008/09.
2. The FE data are from 2008/09 ILR L05, ILR C05, ILR U05 and ILR WBL p15
The 'FE only' provision includes Independent providers and employers as well as General Further Education Colleges including Tertiary, Sixth Form Colleges, Special College - Agricultural and Horticultural Colleges and Art and Design Colleges, Specialist Colleges and External Institutions.
3. The 'FE and Schools' data are from two sources: the Award data in the 2008/09 Young Person Matched Attainment Dataset and the published KS5 SFR 2008/09.
Where the 'FE and Schools' data are based on the YPMD Award data, full discount rules have been applied.
These two data sources are equivalent, being based on awarding body data, rather than provider data.
The 'FE and Schools' data include independent schools and all provision in the maintained sector.
Therefore, the 'FE only' data include publicly funded learners only, while the 'FE and Schools' data includes privately funded learners.
4. To allow for comparison between different data sources, tables use age at 31 August of the academic year for all provision.
Both sets of provision include learners who would be 19 years old when taking the qualification. The 'FE and Schools' data include all under 16 year olds who took that qualification.
The 'FE only' data exclude 19 year olds who have been classed as 'Adult' provision
The 'FE and Schools' data includes all under 16 year olds who took that qualification.
5. All data have been aggregated to qualifications with the same qualification title at that QCF/NVQ level.
6. The 'FE only' Completes includes all learners who completed the programme of learning but their exam paper or assessments may not have sent to the Awarding body
7. To maximise consistency with other reports KS5 SFR has been used for the majority of GCE A levels and AS level data.
However, the 'grouping' of qualifications can be different between the between the two sets of data.
For example in the STEM classification GCE A level Mathematics does not include GCE A level Use of Mathematics, while the KS5 SFR does.
Where there are substantial differences in how qualifications have been grouped between the ILR and KS5 SFR, the YPMD Award data are used as they have the same groupings as the 'FE only' (ILR) data.
There are other smaller differences due to how completes and achieves are counted in the different data sets.
8. There are occasion where the number of learners in 'FE only' is greater than for 'FE and Schools', this reflects the differences in the sources of data and how outcomes are recorded and calculated.
For example, if the qualification is being taken as part of a framework, (eg an Apprenticeship), while the individual may have completed one or more of the component qualifications, the results may be notified to the Awarding body until the individual has completed the whole programme.
Another example is the differences in the providers' approach to 'cashing in' AS levels can produce differences in the Award data and funding data.
9. 'na' : Indicates robust data are not available, because equivalent data could not be identified across the data sets, or the version of the STEM qualification list used to generate the data for the report did not provide a comprehensive identification of that qualification (eg GCE A level and AS level Art and Design)
The electronic presentation uses the latest version of the STEM qualification list.
10. All of the above notes apply to the Level 2 provision, with the exception that 'FE and Schools' data describe all students who took that qualification, including KS4 students.
While the 'FE only' data describe learners 16 and above taking GCSEs after KS4.
11. Therefore, any comparisons between 'FE only' and 'FE and Schools' for level 2 qualifications should made with caution.

Section 5: Technology Qualifications in the FE and Skills Sector

68 This section and Sections 4, 6 and 7 follow a similar format. A description of the Tables can be found in the introduction to Sections 4-7. Notes, written by members of the Steering Group, on the content of the tables in Section 5 follow.

Notes on the Technology Tables

Rationale for categorisation

'Technology' is not a discipline *per se* but a working definition was evolved for this project. The National Curriculum for England and Wales (1990; 1995) National Curriculum foundation subject of 'Technology' included Design & Technology and IT/ICT. So for the purposes of this project (core) Technology was taken to include:

- IT/ICT practitioner qualifications
- Electronics / systems & control
- Music technology
- Production technology and technical theatre (light; sound; media)
- 3-D design
- CAD/CAM
- Interactive media
- Design & Technology GCSEs and GCEs
- IT/ICT GCSEs and GCEs

Technology-related areas were taken to include IT/ICT user qualifications - although all need to be fluent users of IT/ICT; and general Art & Design – because a general Art & Design grounding is necessary to progress to, for example, 3-D/industrial design.

Many Technology qualifications are also listed as Engineering qualifications – for example: IT/ICT practitioner qualifications; A and AS Design and Technology. Most if not all Technology qualifications include Mathematics and Science. However these combinations have not usually been listed as to do so would make the data unwieldy. A notable exception is electronics qualifications which feature in Science, Engineering and Technology lists.

All Tables in this section other than Tables 5.3 and 5.4 refer only to qualifications taken in the specified academic year in the FE and Skills sector in England by publicly funded learners.

Tables 5.3 and 5.4 include additional data about qualifications taken by 16-19 year olds in schools in England. Design and Technology (D&T) is currently the most popular optional GCSE subject at Key Stage 4 (ages 14-16). It includes many aspects of engineering such as electronics, systems & control, CAD/CAM, structures and materials but it is chiefly taken in schools (and at ages 14-16) so it does not appear in Table 5.4). Whilst A level and AS D&T appear in Table 5.3 it can be seen that, again, these qualifications are mostly taken in schools. Conversely, the bulk of IT/ICT practitioner and AS electronics qualifications are taken in the FE and Skills sector.

NVQs taken as part of a Technology Apprenticeship (QCF Level 2) and Advanced Apprenticeship (QCF Level 3) are listed in Tables 5.1.1 and 5.2.1. As usually only one NVQ is taken as part of an Apprenticeship or Advanced Apprenticeship, these NVQ numbers can be taken as a proxy for the number of Apprentices coming through training.

Example top-line numbers:

- 17,523 core Technology qualifications achievements in the FE and Skills sector at Level 2 in 2008/09 (Table 5.1)
- 57,835 core Technology qualifications achievements in the FE and Skills sector at Level 3 in 2008/09 (Table 5.2)
- 2,048 Level 2 Technology NVQs were being taken as part of an Apprenticeship in 2008/09 (Table 5.1.1)
- 5,234 Level 3 Technology NVQs were being taken as part of an Apprenticeship in 2008/09 (Table 5.2.1)
- 5,935 BTEC First Diploma for ICT Practitioners qualifications (Level 2) achieved by 16-18 year olds in the FE and Skills sector in 2008/09 and 11,538 by 16-19 year olds in schools and FE and Skills sector (Table 5.3)
- 99,114 GCSE ICT (Level 2) qualifications achieved in 2008/09 by 16-19 year olds in schools and FE and Skills sector (Table 5.3)
- 11,732 GCE AS level ICT (Level 3) qualifications achieved by 16-18 year olds in the FE and Skills sector in 2008/09 and 29,129 by 16-19 year olds in schools and FE and Skills sector (Table 5.4)
- 16,255 GCE AS level D&T (Level 3) qualifications achieved by 16-19 year olds in schools and FE and Skills sector in 2008/09 (chiefly in schools sector) (Table 5.4)
- 4,075 BTEC National Diploma for IT Practitioners (Level 3) qualifications achieved by 16-19 year olds in schools and the FE and Skills sector in 2008/09 (chiefly in FE and Skills sector) (Table 5.4)

Technology level 2

Table 5.1: Popular qualifications in the Technology classification at QCF/NVQ level 2¹

Level 2		2008/09						2009/10	
S, T, E, M Area	Qualification title	N of Quals ²	Achieves	Completes	Withdws/ Transfers	Continues	Enrols	N of Quals	Enrols
Technology	BTEC First Diploma for ICT Practitioners		6,653	7,087	1,538	17	8,642		9,157
	Certificate in 2D Computer Aided Design		2,387	2,934	459	104	3,497		2,546
	Diploma for IT Practitioners		1,112	1,336	252	183	1,771		1,850
	GCSE ICT		1,055	1,207	378	2	1,587		1,362
	NVQ for Communication Technology Practitioners		1,028	1,036	39	345	1,420		1,498
	NVQ for IT Practitioners		667	691	155	380	1,226		1,156
Technology	Qualifications with 1000 or more enrolments	6	12,902	14,291	2,821	1,031	18,143	6	17,569
	Qualifications with 100 to 999 enrolments	20	3,663	4,162	832	398	5,392	23	7,454
	Qualifications with fewer than 100 enrolments	53	958	1,205	332	20	1,557	42	1,471
Total		79	17,523	19,658	3,985	1,449	25,092	71	26,494
Technology related	Key Skills in Information and Communication Technology		55,481	76,258	13,231	11,461	100,950		79,434
	NVQ for IT Users (ITQ)		22,140	24,137	11,581	17,263	52,981		33,086
	Certificate for IT users (ECDL Part 2)		14,512	16,373	2,753	3,267	22,393		6,652
	IT2 Word Processing - MS 2003 (EP)		6,428	7,633	2,355	2,250	12,238		1,337
	IT2 Spreadsheets - MS 2003 (EP)		5,257	6,008	1,362	1,931	9,301		1,424
	IT2 Introducing Computers - MS 2003 (EP) - Syll 4.5		3,785	4,555	2,455	1,539	8,549		<1000 ⁴
	IT2 Presentations - MS 2003 (EP)		4,607	4,983	592	1,449	7,024		1,067
	IT2 Electronic Communication - MS 2003 (EP) - Syll 4.5		3,614	4,133	1,686	1,128	6,947		<1000 ⁴
	Certificate for IT Users (CLAiT Plus)		3,479	4,479	1,582	850	6,911		4,952
	BTEC First Diploma in Art and Design		4,976	5,229	1,219	67	6,515		6,831
	IT2 Databases - MS 2003 (EP)		3,905	4,314	631	1,476	6,421		1,160
	Award in Functional Skills Information and Communication Technology (QCF)		1,659	2,832	719	367	3,918		12,040
	IT2 Introducing Computers - MS 2003 (EP)		1,665	2,137	1,137	504	3,778		<1000 ⁴
	BTEC First Diploma in Media		2,668	2,859	625	34	3,518		3,640
	IT2 Electronic Communication - MS 2003 (EP)		1,942	2,284	663	556	3,503		<1000 ⁴
	BTEC First Diploma in Performing Arts		2,660	2,801	694	4	3,499		3,441
	ECDL Extra Prepare and Test (MS 2003) - Syllabus 4.5		1,264	1,469	655	1,286	3,410		<1000 ⁴
	ECDL Part 2 Prepare and Test (MS2003)		1,461	1,782	593	648	3,023		<1000 ⁴
	Unit(s) of approved QCF provision - Level 2, Information and Communication Technology (SSA 6), PW B		1,672	2,142	696	164	3,002		1,422
	Diploma for IT Users (e-Quals) - Enhanced		603	743	1,044	1,185	2,972		2,737
	NVQ in Contact Centre Operations		1,463	1,466	334	1,057	2,857		3,016
	Certificate for IT Users (ITQ) (QCF)		709	867	253	963	2,083		4,756
	Diploma for IT Users (CLAiT Plus)		957	1,197	408	373	1,978		1,372
	IT2 Word Processing - MS 2000 (EP)		735	969	623	261	1,853		<1000 ⁴
	Unit(s) of approved NQF provision - Level 2, Information and Communication Technology (SSA 6), PW B		732	1,426	191	13	1,630		7,701
	IT2 Spreadsheets - MS 2000 (EP)		772	918	304	224	1,446		<1000 ⁴
	Diploma in Art and Design		995	1,037	101	255	1,393		1,643
	Award in Art and Design		838	902	291	88	1,281		<1000 ⁴
	IT2 Introducing Computers - MS 2000 (EP)		460	647	395	208	1,250		<1000 ⁴
	The Complete ECDL Extra (MS 2003) - Syllabus 4.5		340	378	308	563	1,249		<1000 ⁴
	TUC Information Communications Technology - Level 2 (30 gh)		956	1,054	44	48	1,146		<1000 ⁴
	IT2 Databases - MS 2000 (EP)		667	768	172	173	1,113		<1000 ⁴
	IT2 Presentations - MS 2000 (EP)		696	763	164	152	1,079		<1000 ⁴
Certificate in IT User Skills (ECDL Extra) (ITQ) (QCF)						<1000 ⁷		27,721	
Certificate in IT User Skills (ITQ) (QCF)						<1000		14,500	
Unit(s) of approved NQF provision - Level 2, Information and Communication Technology (SSA 6), PW B						<1000		7,701	
Diploma for IT Users (ITQ) (QCF)						<1000		2,216	
Technology related	Qualifications with 1000 or more enrolments	33	154,098	189,543	49,861	51,807	291,211	23	223,387
	Qualifications with 100 to 999 enrolments	54	12,851	15,679	4,410	2,684	22,773	58	21,888
	Qualifications with fewer than 100 enrolments	72	819	973	266	212	1,451	78	2,149
Total		159	167,768	206,195	54,537	54,703	315,435	159	247,424

Achievements/ Enrolments as % for Learner Responsive Provision (2008/09 cohort)		
Base Enrols	Achieves ⁵	Rate
8,642	6,653	77.0%
3,434	2,361	68.8%
1,620	1,068	65.9%
1,587	1,055	66.5%
80	78	97.5%
258	194	75.2%
77,331	41,021	53.0%
12,985	5,983	46.1%
21,964	14,439	65.7%
6,585	3,349	50.9%
6,515	4,976	76.4%
3,900	1,654	42.4%
3,518	2,668	75.8%
3,499	2,660	76.0%
2,928	1,668	57.0%
2,586	533	20.6%
-	-	-
1,048	519	49.5%
1,905	929	48.8%
941	692	73.5%
1,393	995	71.4%
1,267	838	66.1%
1,146	956	83.4%

Technology level 2

Table 5.1.1: Technology NVQs taken as part of an Apprenticeship (Level 2)³

Level 2		2008/09						2009/10	
S, T, E, M Area	Qualification title	N of Quals ²	Achieves	Completes	Withdws/ Transfers	Continues	Enrols	N of Quals	Enrols
Technology	NVQ for Communication Technology Practitioners		753	754	30	278	1,062		1,195
	NVQ for IT Practitioners		447	447	118	341	906		791
Technology	Qualifications with 500 or more enrolments	2	1,200	1,201	148	619	1,968	2	1,986
	Qualifications with fewer than 500 enrolments	5	16	16	5	59	80	3	97
Total		7	1,216	1,217	153	678	2,048	5	2,083
Technology related	NVQ for IT Users (ITQ)		2,596	2,615	658	1,880	5,153		2,840
	NVQ in Contact Centre Operations		1,027	1,027	246	460	1,733		1,963
Technology related	Qualifications with 500 or more enrolments	2	3,623	3,642	904	2,340	6,886	2	4,803
	Qualifications with fewer than 500 enrolments	2	21	21	6	39	66	2	81
Total		4	3,644	3,663	910	2,379	6,952	4	4,884

Technology level 3

Table 5.2: Popular qualifications in the Technology classification at QCF/NVQ level 3¹

Level 3		2008/09						2009/10		Achievements/ Enrolments as % for Learner Responsive Provision (2008/09 cohort)		
S,T, E, M Area	Qualification title	N of Quals ²	Achieves	Completes	Withdws/ Transfers	Continues	Enrols	N of Quals	Enrols	Base Enrols	Achieves ⁵	Rate
Technology	GCE AS Level ICT		11,885	14,765	2,864	7	17,636		16,890	17,636	11,885	67.4%
	BTEC National Diploma for IT Practitioners		4,575	4,765	2,376	5,887	13,028		14,244	13,011	4,573	35.1%
	BTEC National Diploma in Media Production		3,700	3,844	1,879	5,008	10,731		11,585	10,731	3,700	34.5%
	GCE A Level ICT		7,096	7,480	509	0	7,989		7,738	7,987	7,094	88.8%
	BTEC National Award for IT Practitioners		3,249	3,557	821	377	4,755		5,389	4,621	3,192	69.1%
	BTEC National Certificate for IT Practitioners		1,588	1,682	954	1,771	4,407		4,447	4,388	1,579	36.0%
	BTEC National Diploma in Music Technology		1,531	1,632	806	1,870	4,308		4,346	4,308	1,531	35.5%
	GCE AS Level Design and Technology		2,310	2,638	471	1	3,110		3,063	3,110	2,310	74.3%
	NVQ for IT Professionals		1,771	1,782	242	759	2,783		4,421	90	64	71.1%
	NVQ for Communication Technology Professionals		754	771	83	1,745	2,599		3,214	-	-	-
	BTEC National Award in Media Production		1,475	1,617	451	426	2,494		2,833	2,494	1,475	59.1%
	GCE AS Level Music Technology		1,739	1,997	294	2	2,293		2,429	2,293	1,739	75.8%
	Advanced Diploma for IT Professionals		1,653	1,723	227	154	2,104		3,745	774	563	72.7%
	Certificate in Computer Aided Design		1,211	1,413	252	92	1,757		1,651	1,740	1,198	68.9%
	GCE A Level Design and Technology		1,633	1,686	66	0	1,752		1,679	1,750	1,632	93.3%
	GCE AS Level Electronics		1,058	1,245	249	1	1,495		1,512	1,495	1,058	70.8%
	BTEC National Award in Music Technology		813	885	179	295	1,359		1,557	1,359	813	59.8%
	GCE A Level Music Technology		1,169	1,207	74	9	1,290		1,232	1,290	1,169	90.6%
	BTEC National Certificate in Media Production		492	533	242	467	1,242		1,479	1,215	465	38.3%
	GCE A Level ICT (Double Award)		799	889	141	82	1,112		<1000 ⁴	1,112	799	71.9%
	Conversion Code: EDEXCEL BTEC National Award to Certificate, SSA 6.1, PWF C						<1000 ⁴		1,060			
	Conversion Code: EDEXCEL BTEC National Award to Diploma, SSA 6.1, PWF C						<1000 ⁴		1,018			
Technology	Qualifications with 1000 or more enrolments	20	50,501	56,111	13,180	18,953	88,244	21	95,532			
	Qualifications with 100 to 999 enrolments	31	6,283	6,817	1,272	1,800	9,889	29	10,658			
	Qualifications with fewer than 100 enrolments	72	1,051	1,228	339	437	2,004	63	1,559			
Total		123	57,835	64,156	14,791	21,190	100,137	113	107,749			
Technology related	GCE AS Level in Art and Design		24,462	26,191	5,286	186	31,663		30,944	31,663	24,462	77.3%
	BTEC National Diploma in Art and Design		9,510	9,779	3,998	11,732	25,509		25,895	25,505	9,510	37.3%
	GCE A Level in Art and Design		14,960	15,291	1,009	4	16,304		16,765	16,300	14,958	91.8%
	Key Skills in Information and Communication Technology		5,889	11,117	2,042	2,175	15,334		10,567	14,902	5,727	38.4%
	BTEC Foundation Diploma in Art and Design		6,512	6,678	714	345	7,737		7,944	7,737	6,512	84.2%
	BTEC National Award in Art and Design		2,255	2,418	393	291	3,102		4,259	3,102	2,255	72.7%
	NVQ for IT Users (ITQ)		1,041	1,175	415	1,088	2,678		2,195	462	210	45.5%
	BTEC National Certificate in Art and Design		1,083	1,154	362	685	2,201		2,347	2,197	1,083	49.3%
	Diploma in Foundation Studies in Art, Design and Media		1,320	1,355	139	88	1,582		1,273	1,582	1,320	83.4%
	Certificate in Using ICT		416	707	253	311	1,271		<1000	1,210	413	34.1%
Technology related	Qualifications with 1000 or more enrolments	10	67,448	75,865	14,611	16,905	107,381	9	102,189			
	Qualifications with 100 to 999 enrolments	40	6,762	7,538	1,599	1,662	10,799	39	11,353			
	Qualifications with fewer than 100 enrolments	76	1,469	1,593	307	394	2,294	70	2,314			
Total		126	75,679	84,996	16,517	18,961	120,474	118	115,856			

Technology level 3

Table 5.2.1: Technology NVQs taken as part of an Advanced Apprenticeship (Level 3)³

Level 3		2008/09						2009/10	
S,T, E, M Area	Qualification title	N of Quals ²	Achieves	Completes	Withdws/ Transfers	Continues	Enrols	N of Quals	Enrols
Technology	NVQ for Communication Technology Professionals		693	710	66	1,743	2,519		3,167
	NVQ for IT Professionals		1,577	1,583	201	714	2,498		4,107
Technology	Qualifications with 500 or more enrolments	2	2,270	2,293	267	2,457	5,017	2	7,274
	Qualifications with fewer than 500 enrolments	4	178	179	30	8	217	2	19
Total		6	2,448	2,472	297	2,465	5,234	4	7,293
Technology related	Qualifications with 500 or more enrolments	1	269	269	74	299	642	0	0
	Qualifications with fewer than 500 enrolments	5	247	247	54	248	549	5	829
Total		6	516	516	128	547	1,191	5	829

Notes for Table 5.1 to Table 5.2.1

- Data are from 2008/09 ILR L05, ILR C05, ILR U05 and ILR WBL p15, and for 2009/10 ILR FE L04, ILR C04, ILR U03 and ILR WBL p12.
Data cover all age groups in 'FE colleges', independent providers, third sector providers and employers.
'FE colleges' includes General Further Education Colleges including Tertiary, Sixth Form Colleges, Special College - Agricultural and Horticultural Colleges and Art and Design Colleges, Specialist Colleges and External Institutions.
- N of Quals' refers to the number of different qualification titles.
- All apprenticeships taken during 2008/09 and 2009/10 included an NVQ
- "<1000" indicates where there were less than 1000 enrolments within that qualification title in that year across of the FE and Skills sector.
However, numbers of enrolments, etc. for that qualification title are still counted in appropriated sub group total, e.g. 'Qualifications with 100 to 999 enrolments'.
- "-" indicates that there were <50 achieves in learner responsive provision in qualifications with that qualification title

Technology level 2 (FE and Schools)

Table 5.3: QCF Level 2 Technology qualifications with over 1000 Enrolments taken in FE compared to numbers taken in FE and Schools in England in 2008/09¹

FE only 16-18 ¹⁰					FE and Schools 16-18 ¹⁰		% Completes in FE/ FE & Schools ¹¹
Technology	Qualification title	Enrols	Completes	Achieves	Completes	Achieves	
Technology	BTEC First Diploma for ICT Practitioners	7,668	6,333	5,935	11,538	11,538	55%
	GCSE ICT	1,469	1,126	985	103,437	99,114	1%
Technology related	Award in Functional Skills Information and Communication Technology (QCF)	3,552	2,569	1,492	13,245	6,619	19%
	BTEC First Diploma in Art and Design	5,547	4,527	4,324	9,678	9,678	47%
	BTEC First Diploma in Media	3,004	2,424	2,259	5,140	5,140	47%
	BTEC First Diploma in Performing Arts	3,182	2,602	2,473	7,483	7,483	35%
	Certificate for IT Users (CLAiT Plus)	1,689	1,179	978	3,674	3,674	32%
	Certificate for IT users (ECDL Part 2)	3,666	2,973	2,756	12,004	12,004	25%
	Key Skills in Information and Communication Technology	79,215	61,112	42,514	46,904	46,904	130%
NVQ for IT Users (ITQ)	4,198	2,552	2,403	2,154	2,154	118%	

Technology level 3 (FE and Schools)

Table 5.4: QCF Level 3 Technology qualifications with over 1000 Enrolments taken in FE compared to numbers taken in FE and Schools in England in 2008/09¹

FE only ² 16-18 ⁴					FE and Schools ³ 16-18 ⁴		
Technology	Qualification title ⁵	Enrols	Completes ⁶	Achieves	Completes ⁷	Achieves	% Completes in FE/ FE & Schools ⁸
Technology	Advanced Diploma for IT Professionals	1,278	1,085	1,073	1,096	1,096	99%
	BTEC National Award for IT Practitioners	4,024	3,027	2,768	3,450	3,448	88%
	BTEC National Award in Media Production	2,188	1,385	1,270	1,329	1,329	104%
	BTEC National Award in Music Technology	1,135	704	648	603	603	117%
	BTEC National Certificate for IT Practitioners	3,517	1,229	1,158	1,772	1,772	69%
	BTEC National Certificate in Media Production	1,055	405	378	570	570	71%
	BTEC National Diploma for IT Practitioners	10,801	3,564	3,411	4,075	4,075	87%
	BTEC National Diploma in Media Production	9,189	3,011	2,903	3,249	3,249	93%
	BTEC National Diploma in Music Technology	3,254	1,142	1,074	1,166	1,166	98%
	GCE A Level Design and Technology	1,738	1,672	1,620	15,284	14,911	11%
	GCE A Level ICT	7,739	7,256	6,892	23,047	21,518	31%
	GCE A Level Music Technology	1,266	1,187	1,149	3,151	3,017	38%
	GCE AS Level Design and Technology	3,085	2,620	2,297	18,938	16,255	14%
	GCE AS Level Electronics	1,467	1,225	1,042	1,697	1,414	72%
	GCE AS Level ICT	17,367	14,569	11,732	36,396	29,129	40%
	GCE AS Level Music Technology	2,253	1,971	1,718	4,517	3,952	44%
NVQ for IT Professionals	1,396	1,022	1,019	1,059	1,059	97%	
Technology related	BTEC Foundation Diploma in Art and Design	5,354	4,878	4,785	5,781	5,781	84%
	BTEC National Award in Art and Design	2,640	2,031	1,895	2,092	2,092	97%
	BTEC National Certificate in Art and Design	1,651	830	785	1,128	1,128	74%
	BTEC National Diploma in Art and Design	22,164	7,965	7,758	8,712	8,712	91%
	Diploma in Foundation Studies in Art, Design and Media	1,167	1,083	1,057	1,430	1,429	76%
	GCE A Level in Art and Design	15,453	14,547	14,249	39,958	39,231	36%
	GCE AS Level in Art and Design	30,142	25,057	23,441	53,982	50,570	46%
	Key Skills in Information and Communication Technology	14,311	10,377	5,523	5,816	5,816	178%

Technology

Notes for Table 5.3 and Table 5.4.

1. All data refer to qualifications taken in that academic year 2008/09.
2. The FE data are from 2008/09 ILR L05, ILR C05, ILR U05 and ILR WBL p15.
The 'FE only' provision includes Independent providers and employers as well as General Further Education Colleges including Tertiary, Sixth Form Colleges, Special College - Agricultural and Horticultural Colleges and Art and Design Colleges, Specialist Colleges and External Institutions.
3. The 'FE and Schools' data are from two sources: the Award data in the 2008/09 Young Person Matched Attainment Dataset and the published KS5 SFR 2008/09.
Where the 'FE and Schools' data are based on the YPMD Award data, full discount rules have been applied.
These two data sources are equivalent, being based on awarding body data, rather than provider data.
The 'FE and Schools' data include independent schools and all provision in the maintained sector.
Therefore, the 'FE only' data include publicly funded learners only, while the 'FE and Schools' data includes privately funded learners.
4. To allow for comparison between different data sources, tables use age at 31 August of the academic year for all provision.
Both sets of provision include learners who would be 19 years old when taking the qualification. The 'FE and Schools' data include all under 16 year olds who took that qualification.
The 'FE only' data exclude 19 year olds who have been classed as 'Adult' provision
The 'FE and Schools' data includes all under 16 year olds who took that qualification.
5. All data have been aggregated to qualifications with the same qualification title at that QCF/NVQ level.
6. The 'FE only' Completes includes all learners who completed the programme of learning but their exam paper or assessments may not have sent to the Awarding body
7. To maximise consistency with other reports KS5 SFR has been used for the majority of GCE A levels and AS level data.
However, the 'grouping' of qualifications can be different between the between the two sets of data.
For example in the STEM classification GCE A level Mathematics does not include GCE A level Use of Mathematics, while the KS5 SFR does.
Where there are substantial differences in how qualifications have been grouped between the ILR and KS5 SFR, the YPMD Award data are used as they have the same groupings as the 'FE only' (ILR) data.
There are other smaller differences due to how completes and achieves are counted in the different data sets.
8. There are occasion where the number of learners in 'FE only' is greater than for 'FE and Schools', this reflects the differences in the sources of data and how outcomes are recorded and calculated.
For example, if the qualification is being taken as part of a framework, (eg an Apprenticeship), while the individual may have completed one or more of the component qualifications, the results may be notified to the Awarding body until the individual has completed the whole programme.
Another example is the differences in the providers' approach to 'cashing in' AS levels can produce differences in the Award data and funding data.
9. 'na' : Indicates robust data are not available, because equivalent data could not be identified across the data sets, or the version of the STEM qualification list used to generate the data for the report did not provide a comprehensive identification of that qualification (eg GCE A level and AS level Art and Design)
The electronic presentation uses the latest version of the STEM qualification list.
10. All of the above notes apply to the Level 2 provision, with the exception that 'FE and Schools' data describe all students who took that qualification, including KS4 students.
While the 'FE only' data describe learners 16 and above taking GCSEs after KS4.
11. Therefore, any comparisons between 'FE only' and 'FE and Schools' for level 2 qualifications should made with caution.

Section 6: Engineering Qualifications in the FE and Skills Sector

69 This section and Sections 4, 5 and 7 follow a similar format. A description of the Tables can be found in Section 4 Notes, written by members of the Steering Group, on the content of the tables in Section 6 follow.

Notes on the Engineering Tables

Rationale for categorisation

'Engineering' is a profession encompassing a wide range of disciplines. For the purposes of this project, 'Engineering' was taken to include the following Sector Subject Area Tier 1 classifications:

- Construction and the Built Environment
- Engineering
- Information Technology
- Manufacturing and Product Design

Engineering qualifications were taken to be those within these Tier 1 classifications that are likely to support progression to engineer or engineering technician roles. Engineering related qualifications are those from the same Tier 1 classifications, and a few from other Tier 1 classifications, which equip people for work in engineering or engineering-related environments but in roles other than that of engineer or engineering technician.

Many Engineering qualifications are also listed as Technology qualifications, and a few are also listed as Science qualifications – for example, electronics qualifications feature in Science, Engineering and Technology lists.

All Tables in this section other than Tables 6.3 and 6.4 refer only to qualifications taken in the specified academic year in the FE and Skills sector in England by publicly funded learners.

Tables 6.3 and 6.4 include additional data about qualifications taken by 16-19 year olds in schools in England. 70% of BTEC Firsts in Engineering are taken in the FE and Skills sector. 11% of A Level Design & Technology and 31% of A Level ICT is taken in the sector

NVQs taken as part of a Technology Apprenticeship (QCF Level 2) and Advanced Apprenticeship (QCF Level 3) are listed in Tables 6.1.1 and 6.2.1. As usually only one NVQ is taken as part of an Apprenticeship or Advanced Apprenticeship, these NVQ numbers can be taken as a proxy for the number of Apprentices coming through training.

Example top-line numbers:

- 222,647 engineering and engineering related qualification achievements in the FE and Skills sector at Level 2 in 2008/09
- 140,876 engineering and engineering related qualification achievements in the FE and Skills sector at Level 3 in 2008/09
- 56,154 (approx) Engineering Apprenticeships were being taken in 2008/09
- A further 9,282 Engineering related Apprenticeships were being taken in 2008/09
- 70,632 (approx) Engineering Advanced Apprenticeships were being taken in 2008/09
- A further 2,444 Engineering related Advanced Apprenticeships were being taken in 2008/09
- At Level 2, 91% of achievements in 2008/09 were obtained in qualifications for which there were more than 1000 enrolments
- At Level 3, 86% of achievements in 2008/09 were obtained in qualifications for which there were more than 1000 enrolments

Engineering level2

Table 6.1: Popular qualifications in the Engineering classification at QCF/NVQ level 2¹

Level 2		2008/09						2009/10		Achievements/ Enrolments as % for Learner Responsive Provision (2008/09 cohort)		
S, T, E, M Area	Qualification title	N of Quals ²	Achieves	Completes	Withdrawls/ Transfers	Continues	Enrols	N of Quals	Enrols	Base Enrols	Achieves ⁵	Rate
Engineering	NVQ in Plant Operations	27,195	27,342	2,150	7,943	37,435		30,265	288	251	87.2%	
	Certificate in Electrotechnical Technology	18,001	19,675	4,944	11,050	35,669		33,876	19,185	9,157	47.7%	
	Construction Award	21,522	22,807	6,178	5,757	34,742		8,291	14,377	9,543	66.4%	
	NVQ in Performing Engineering Operations	14,968	15,461	2,904	5,813	24,178		23,112	6,365	4,204	66.0%	
	Certificate in Basic Plumbing Studies	9,740	10,982	3,487	7,131	21,600		20,430	13,213	6,025	45.6%	
	NVQ in Performing Manufacturing Operations	13,128	13,282	2,092	5,967	21,341		14,204	1,771	823	46.5%	
	Certificate in Vehicle Maintenance and Repair	8,874	9,301	2,899	7,591	19,791		20,356	5,086	3,631	71.4%	
	NVQ in Food Manufacture	8,633	8,685	1,304	4,554	14,543		13,342	299	240	80.3%	
	NVQ in Vehicle Maintenance and Repair	4,729	4,793	2,307	7,377	14,477		13,810	-	-	-	
	NVQ in Mechanical Engineering Services - Plumbing	3,741	3,904	1,518	4,943	10,365		9,164	946	430	45.5%	
	BTEC First Diploma for ICT Practitioners	6,653	7,087	1,538	17	8,642		9,157	8,642	6,653	77.0%	
	NVQ in Waste Management Operations	5,010	5,032	315	800	6,147		4,738	-	-	-	
	NVQ in Engineering Maintenance and Installation	2,403	2,415	394	2,449	5,258		5,409	-	-	-	
	Certificate in 2D Computer Aided Design	2,387	2,934	459	104	3,497		2,546	3,434	2,361	68.8%	
	Certificate in Engineering and Technology	2,386	2,451	421	599	3,471		2,822	632	472	74.7%	
	NVQ in Mechanical Engineering Services - Heating and Ventilating Installation	1,683	1,738	320	1,015	3,073		1,983	-	-	-	
	BTEC First Diploma in Engineering	2,087	2,265	484	126	2,875		3,152	2,302	1,695	73.6%	
	Certificate in Heating and Ventilation Installation	1,604	1,730	320	714	2,764		2,399	1,159	680	58.7%	
	Certificate in Domestic Natural Gas Installation and Maintenance	1,529	1,591	240	919	2,750		2,405	1,212	732	60.4%	
	NVQ in Railway Engineering	1,531	1,640	195	814	2,649		2,894	403	326	80.9%	
	Certificate in Engineering	1,108	1,194	352	853	2,399		3,219	508	321	63.2%	
	NVQ in Electrical and Electronics Servicing	911	1,001	231	820	2,052		1,618	236	96	40.7%	
	Certificate in Small Commercial Refrigeration and Air Conditioning Systems	1,019	1,076	290	472	1,838		1,366	956	469	49.1%	
	Diploma for IT Practitioners	1,112	1,336	252	183	1,771		1,850	1,620	1,068	65.9%	
	GCSE ICT	1,055	1,207	378	2	1,587		1,362	1,587	1,055	66.5%	
	NVQ for Communication Technology Practitioners	1,028	1,036	39	345	1,420		1,498	80	78	97.5%	
	NVQ in Mechanical Engineering Services - Refrigeration and Air Conditioning	561	591	153	618	1,362		1,122	231	96	41.6%	
	NVQ for IT Practitioners	667	691	155	380	1,226		1,156	258	194	75.2%	
	NVQ in Plant Maintenance	618	623	115	361	1,099		<1000 ⁴	-	-	-	
	NVQ in Fabrication and Welding Engineering	504	528	143	413	1,084		<1000 ⁴	135	88	65.2%	
	Diploma in Hybrid Vehicle Introduction and Environmental Improvements (NVQ) (QCF)					<1000 ⁷		1,910				
	Award in Welding Skills (QCF)					<1000		1,322				
	BTEC First Diploma in Construction					<1000		1,416				
Engineering	Qualifications with 1000 or more enrolments	30	166,387	174,398	36,577	80,130	291,105	31	242,194			
	Qualifications with 100 to 999 enrolments	72	14,630	15,809	2,888	6,762	25,459	71	26,373			
	Qualifications with fewer than 100 enrolments	135	1,890	2,274	639	348	3,261	105	3,472			
Total		237	182,907	192,481	40,104	87,240	319,825	207	272,039			

Engineering level 2

Table 6.1 (continued): Popular qualifications in the Engineering classification at QCF/NVQ level 2

Level 2		2008/09						2009/10		Achievements/ Enrolments as % for Learner Responsive Provision (2008/09 cohort)		
S, T, E, M Area	Qualification title	N of Qualls ²	Achieves	Completes	Withdws/ Transfers	Continues	Enrols	N of Qualls	Enrols	Base Enrols	Achieves ⁵	Rate
Engineering related	NVQ in Construction Operations		7,174	7,218	1,540	1,951	10,709		6,686	-	-	-
	NVQ in Interior Systems		3,803	3,839	493	845	5,177		2,691	-	-	-
	NVQ in Specialised Plant and Machinery Operations (Lifting and Transferring)		2,616	2,643	335	914	3,892		2,553	-	-	-
	NVQ in Fenestration Installation		1,790	1,794	261	1,046	3,101		2,801	-	-	-
	Certificate in Vehicle Body and Paint Operations		1,374	1,401	586	917	2,904		2,755	991	739	74.6%
	NVQ in Contact Centre Operations		1,463	1,466	334	1,057	2,857		3,016	-	-	-
	NVQ in Highways Maintenance		1,877	1,900	174	576	2,650		2,007	-	-	-
	NVQ in Vehicle Fitting Operations		942	950	375	1,067	2,392		2,182	-	-	-
	NVQ in Vehicle Body and Paint Operations		692	710	456	1,213	2,379		2,057	-	-	-
	Certificate in Vehicle Fitting Operations		940	993	372	809	2,174		2,323	733	513	70.0%
	NVQ in Maintenance Operations (Construction)		317	328	131	820	1,279		2,276	-	-	-
	NVQ in Insulation and Building Treatments (Construction)		735	735	63	406	1,204		1,881	-	-	-
	Certificate in Furniture Production		532	575	165	359	1,099		1,025	548	300	54.7%
	NVQ in Specialist Concrete Occupations		811	811	103	176	1,090		<1000 ⁴	-	-	-
	NVQ in Roadbuilding (Construction)		713	715	85	230	1,030		<1000 ⁴	-	-	-
	NVQ in Specialised Plant and Machinery Operations		894	894	100	18	1,012		<1000 ⁴	-	-	-
	NVQ Diploma in Business-Improvement Techniques (QCF)						<1000		1,841	-	-	-
	NVQ in Vehicle Parts Operations						<1000		1,077	-	-	-
Engineering related	Qualifications with 1000 or more enrolments	16	26,673	26,972	5,573	12,404	44,949	15	37171			
	Qualifications with 100 to 999 enrolments	46	12,375	12,946	2,416	6,026	21,388	44	16,523			
	Qualifications with fewer than 100 enrolments	39	692	719	154	349	1,222	53	1,616			
Total		101	39,740	40,637	8,143	18,779	67,559	112	55,310			

Engineering level 2

Table 6.1.1: Engineering NVQs taken as part of an Apprenticeship (Level 2)³

Level 2		2008/09						2009/10	
S, T, E, M Area	Qualification title	N of Quals ²	Achieves	Completes	Withdws/ Transfers	Continues	Enrols	N of Quals	Enrols
Engineering	NVQ in Performing Engineering Operations		10,552	10,534	1,720	4,987	17,241		16,090
	NVQ in Vehicle Maintenance and Repair		4,422	4,464	2,118	6,916	13,498		12,931
	NVQ in Mechanical Engineering Services - Plumbing		2,830	2,858	1,123	4,169	8,150		7,333
	NVQ in Engineering Maintenance and Installation		1,733	1,738	205	1,833	3,776		4,005
	NVQ in Performing Manufacturing Operations		1,192	1,194	183	344	1,721		1,067
	NVQ in Mechanical Engineering Services - Heating and Ventilating Installation		750	762	178	684	1,624		1,320
	NVQ for Communication Technology Practitioners		753	754	30	278	1,062		1,195
	NVQ in Railway Engineering		697	705	74	238	1,017		1,233
	NVQ for IT Practitioners		447	447	118	341	906		791
	NVQ in Mechanical Engineering Services - Refrigeration and Air Conditioning		364	364	94	383	841		690
	NVQ in Aeronautical Engineering		237	237	106	438	781		856
	NVQ in Plant Maintenance		360	360	95	248	703		<500
	NVQ in Domestic Natural Gas Installation and Maintenance (ACS)		235	237	90	290	617		565
	NVQ in Food Manufacture		202	202	96	294	592		848
	NVQ in Land-Based Service Engineering		200	200	24	294	518		<500
Engineering	Qualifications with 500 or more enrolments	15	24,974	25,056	6,254	21,737	53,047	13	48,924
	Qualifications with fewer than 500 enrolments	45	1,423	1,432	342	1,333	3,107	37	3,431
Total		60	26,397	26,488	6,596	23,070	56,154	50	52,355
Engineering related	NVQ in Vehicle Body and Paint Operations		597	602	402	1,055	2,059		1,780
	NVQ in Contact Centre Operations		1,027	1,027	246	460	1,733		1,963
	NVQ in Vehicle Fitting Operations		420	420	270	826	1,516		1,482
	NVQ in Vehicle Parts Operations		180	180	162	385	727		878
	NVQ in Construction Operations		283	281	160	280	721		871
Engineering related	Qualifications with 500 or more enrolments	5	2,507	2510	1240	3006	6756	5	6,974
	Qualifications with fewer than 500 enrolments	35	995	1,002	334	1,190	2,526	34	2,663
Total		40	3,502	3,512	1,574	4,196	9,282	39	9,637

Engineering level 3

Table 6.2: Popular qualifications in the Engineering classification at QCF/NVQ level 3¹

Level 3		2008/09						2009/10		Achievements/ Enrolments as % for Learner Responsive Provision (2008/09 cohort)		
S, T, E, M Area	Qualification title	N of Qualls ²	Achieves	Completes	Withdraws/ Transfers	Continues	Enrols	N of Qualls	Enrols	Base Enrols	Achieves ⁵	Rate
Engineering	Certificate in Electrotechnical Technology		12,911	13,763	1,979	8,600	24,342		23,492	7,197	5,142	71.4%
	NVQ in Electrotechnical Services		4,156	4,309	2,617	17,202	24,128		22,200	816	151	36.9%
	GCE AS Level ICT		11,885	14,765	2,864	7	17,636		16,890	17,636	11,885	72.2%
	BTEC National Diploma for IT Practitioners		4,575	4,765	2,376	5,887	13,028		14,244	13,011	4,573	73.3%
	Certificate in the Requirements for Electrical Installations (BS 7671 June 2008)		8,611	9,215	101	63	9,379		5,856	9,337	8,576	92.9%
	NVQ in Engineering Maintenance		2,113	2,169	775	6,143	9,087		9,530	-	-	-
	NVQ in Vehicle Maintenance and Repair		4,080	4,124	710	3,667	8,501		9,076	146	90	66.4%
	GCE A Level ICT		7,096	7,480	509	0	7,989		7,738	7,987	7,094	91.1%
	Advanced Construction Award		4,735	5,191	1,302	1,186	7,679		2,255	1,344	634	48.1%
	Certificate in Plumbing Studies		3,352	3,542	676	3,224	7,442		7,283	2,441	1,144	70.7%
	NVQ in Mechanical Engineering Services - Plumbing (Domestic)		2,193	2,237	701	3,380	6,318		5,819	442	213	74.3%
	NVQ in Mechanical Manufacturing Engineering		1,471	1,486	670	3,733	5,889		5,636	-	-	-
	Diploma in Vehicle Maintenance and Repair		3,188	3,252	506	1,559	5,317		6,041	885	676	82.6%
	BTEC National Award for IT Practitioners		3,249	3,557	821	377	4,755		5,389	4,621	3,192	79.0%
	BTEC National Certificate in Electrical/Electronic Engineering		1,987	2,068	545	1,890	4,503		3,928	1,766	680	67.1%
	BTEC National Certificate for IT Practitioners		1,588	1,682	954	1,771	4,407		4,447	4,388	1,579	71.4%
	BTEC National Diploma in Music Technology		1,531	1,632	806	1,870	4,308		4,346	4,308	1,531	65.6%
	Certificate in Engineering		1,587	1,622	422	1,628	3,672		3,599	650	261	65.0%
	BTEC National Award in Engineering		1,953	2,155	371	884	3,410		3,559	1,812	1,237	73.8%
	Diploma in Engineering and Technology		1,338	1,374	280	1,688	3,342		2,918	452	234	72.9%
	Certificate in the Requirements for Electrical Installations (16 to 17th edition update BS7671 June 2008)		2,755	2,931	97	239	3,267		1,657	2,984	2,738	93.6%
	BTEC National Certificate in Manufacturing Engineering		1,377	1,413	486	1,360	3,259		2,944	732	288	63.8%
	GCE AS Level Design and Technology		2,310	2,638	471	1	3,110		3,063	3,110	2,310	78.3%
	NVQ in Construction Site Supervision		1,510	1,534	299	988	2,821		2,329	-	-	-
	NVQ for IT Professionals		1,771	1,782	242	759	2,783		4,421	90	64	-
	BTEC National Diploma in Construction		995	1,064	542	1,066	2,672		2,184	2,672	995	65.1%
	NVQ for Communication Technology Professionals		754	771	83	1,745	2,599		3,214	-	-	-
	Certificate in Vehicle Maintenance and Repair		1,505	1,559	167	768	2,494		2,668	421	303	74.8%
	BTEC National Certificate in Mechanical Engineering		1,002	1,039	303	1,105	2,447		2,178	623	267	69.5%
	BTEC National Certificate in Operations and Maintenance Engineering		1,108	1,127	227	1,057	2,411		2,318	404	144	68.5%
	NVQ in Fabrication and Welding		579	588	345	1,456	2,389		2,272	-	-	-
	GCE AS Level Music Technology		1,739	1,997	294	2	2,293		2,429	2,293	1,739	81.6%
	Advanced Diploma for IT Professionals		1,653	1,723	227	154	2,104		3,745	774	563	79.8%

Engineering level 3

Table 6.2 (continued): Popular qualifications in the Engineering classification at QCF/NVQ level 3

Level 3		2008/09						2009/10		Achievements/ Enrolments as % for Learner Responsive Provision (2008/09 cohort)		
S, T, E, M Area	Qualification title	N of Qualls ²	Achieves	Completes	Withdws/ Transfers	Continues	Enrols	N of Qualls	Enrols	Base Enrols	Achieves ⁵	Rate
	BTEC National Certificate in Construction		794	912	384	699	1,995		1,397	1,863	751	79.8%
	NVQ in Engineering Technical Support		422	425	196	1,265	1,886		2,070	-	-	-
	BTEC National Diploma in Electrical/Electronic Engineering		594	656	412	768	1,836		1,898	1,803	586	79.8%
	Certificate in Computer Aided Design		1,211	1,413	252	92	1,757		1,651	1,740	1,198	79.8%
	GCE A Level Design and Technology		1,633	1,686	66	0	1,752		1,679	1,750	1,632	79.8%
	NVQ in Aeronautical Engineering		276	277	78	1,373	1,728		2,285	-	-	-
	GCE AS Level Electronics		1,058	1,245	249	1	1,495		1,512	1,495	1,058	79.8%
	Certificate in the Certification of Electrical Installations		686	1,307	37	57	1,401		1,503	1,399	686	79.8%
	BTEC National Award in Construction		987	1,119	215	55	1,389		1,409	1,389	987	79.8%
	BTEC National Award in Music Technology		813	885	179	295	1,359		1,557	1,359	813	79.8%
	GCE A Level Music Technology		1,169	1,207	74	9	1,290		1,232	1,290	1,169	79.8%
	NVQ in Mechanical Engineering Services - Heating and Ventilating Installation		533	540	80	651	1,271		1,160	-	-	-
	NVQ in Railway Engineering		347	389	57	785	1,231		1,189	-	-	-
	BTEC National Diploma in Engineering		392	413	244	570	1,227		1,755	1,224	390	79.8%
	BTEC National Certificate in Engineering		298	312	171	652	1,135		1,549	570	163	79.8%
	GCE A Level ICT (Double Award)		799	889	141	82	1,112		<1000 ⁴	1,112	799	79.8%
	BTEC National Certificate in Civil Engineering		466	512	179	412	1,103		<1000 ⁴	906	384	79.8%
	Certificate in Electrical Technology Engineering		365	384	76	609	1,069		1,049	733	244	79.8%
	Certificate in Aeronautical Engineering						<1000 ⁷		1,355			
	BTEC National Diploma in Vehicle Technology						<1000		1,233			
	Conversion Code: EDEXCEL BTEC National Award to Certificate, SSA 6.1, PWF C						<1000		1,060			
	Conversion Code: EDEXCEL BTEC National Award to Diploma, SSA 6.1, PWF C						<1000		1,018			
	Certificate in Complex Domestic Natural Gas Installation and Maintenance						<1000		1,014			
Engineering	Qualifications with 1000 or more enrolments	51	115,500	125,125	26,858	83,834	235,817	51	230,243			
	Qualifications with 100 to 999 enrolments	103	15,835	16,844	4,354	14,643	35,841	99	35,440			
	Qualifications with fewer than 100 enrolments	179	2,277	2,501	827	1,379	4,707	160	4,053			
Total		333	133,612	144,470	32,039	99,856	276,365	310	269,736			
Engineering related	NVQ in Vehicle Body and Paint Operations		1,289	1,300	272	1,167	2,739		2,535	-	-	-
	Certificate for the Inspection and Testing of Electrical Equipment (Code of Practice for In-Service Inspection)		1,308	1,672	54	70	1,796		1,686	1,755	1,275	72.6%
	Certificate in Heating and Ventilation Installation		516	523	87	448	1,058		<1000	158	105	66.5%
Engineering related	Qualifications with 1000 or more enrolments	3	3,113	3,495	413	1,685	5,593	2	4,221			
	Qualifications with 100 to 999 enrolments	23	3,197	3,320	546	1,853	5,719	23	6,963			
	Qualifications with fewer than 100 enrolments	59	954	1,013	134	520	1,667	63	1,442			
Total		85	7,264	7,828	1,093	4,058	12,979	88	12,626			

Engineering level 3

Table 6.2.1: Engineering NVQs taken as part of an Advanced Apprenticeship (Level 3)³

Level 3		2008/09						2009/10	
S,T, E, M Area	Qualification title	N of Quals ²	Achieves	Completes	Withdws/ Transfers	Continues	Enrols	N of Quals	Enrols
Engineering	NVQ in Electrotechnical Services		3,610	3,631	2,407	16,031	22,069		19,910
	NVQ in Engineering Maintenance		1,751	1,757	704	5,556	8,017		8,267
	NVQ in Vehicle Maintenance and Repair		3,620	3,638	625	2,942	7,205		7,015
	NVQ in Mechanical Engineering Services - Plumbing (Domestic)		1,839	1,846	642	3,098	5,586		5,163
	NVQ in Mechanical Manufacturing Engineering		1,299	1,303	659	3,558	5,520		5,236
	NVQ for IT Professionals		1,577	1,584	428	735	2,747		4,660
	NVQ for Communication Technology Professionals		694	711	73	1,745	2,529		2,980
	NVQ in Fabrication and Welding		500	506	326	1,354	2,186		2,058
	NVQ in Engineering Technical Support		377	380	180	1,143	1,703		1,850
	NVQ in Aeronautical Engineering		270	270	79	1,346	1,695		2,156
	NVQ in Railway Engineering		217	217	34	730	981		988
	NVQ in Mechanical Engineering Services - Heating and Ventilating Installation		331	332	66	556	954		878
	NVQ in Electrical and Electronic Engineering		147	147	84	486	717		799
	NVQ in Marine Engineering		171	171	35	510	716		741
	NVQ in Domestic Natural Gas Maintenance		208	208	26	300	534		566
	NVQ in Electricity Systems Technology Engineering		119	119	73	342	534		<500
	NVQ in Installation and Commissioning		117	117	63	332	512		532
Engineering	Qualifications with 500 or more enrolments	17	16,847	16,937	6,504	40,764	64,205	16	63,799
	Qualifications with fewer than 500 enrolments	77	2,022	2,037	773	3,617	6,427	66	6,092
Total		94	18,869	18,974	7,277	44,381	70,632	82	69,891
Engineering related	NVQ in Vehicle Body and Paint Operations		405	410	129	345	884		768
Engineering related	Qualifications with 500 or more enrolments	1	405	410	129	345	884	1	768
	Qualifications with fewer than 500 enrolments	27	561	561	201	798	1,560	25	1,381
Total		28	966	971	330	1,143	2,444	26	2,149

Engineering

Notes for Table 6.1 to Table 6.2.1

1. Data are from 2008/09 ILR L05, ILR C05, ILR U05 and ILR WBL p15, and for 2009/10 ILR L04, ILR C04, ILR U03 and ILR WBL p12.
Data cover all age groups in 'FE colleges', independent providers, third sector providers and employers.
'FE colleges' includes General Further Education Colleges including Tertiary, Sixth Form Colleges, Special College - Agricultural and Horticultural Colleges and Art and Design Colleges, Specialist Colleges and External Institutions.
2. 'N of Quals' refers to the number of different qualification titles.
3. All apprenticeships taken during 2008/09 and 2009/10 included an NVQ
4. "<1000" indicates where there were less than 1000 enrolments within that qualification title in that year across of the FE and Skills sector.
However, numbers of enrolments, etc. for that qualification title are still counted in appropriated sub group total, e.g. 'Qualifications with 100 to 999 enrolments'.
5. "-" indicates that there were <50 achieves in learner responsive provision in qualifications with that qualification title

Engineering level 2 (FE and Schools)

Table 6.3: QCF Level 2 Engineering qualifications with over 1000 Enrolments taken in FE compared to numbers taken in FE and Schools in England in 2008/09¹

FE only 16-18 ¹⁰					FE and Schools 16-18 ¹⁰		
Engineering	Qualification title	Enrols	Completes	Achieves	Completes	Achieves	% Completes in FE/ FE & Schools
Engineering	BTEC First Diploma for ICT Practitioners	7,668	6,333	5,935	11,538	11,538	55%
	BTEC First Diploma in Engineering	2,503	1,991	1,824	2,866	2,866	70%
	Certificate in Basic Plumbing Studies	10,225	5,057	4,235	4,082	4,080	124%
	Certificate in Electrotechnical Technology	13,967	7,422	6,496	6,022	6,020	123%
	Certificate in Engineering	1,760	879	811	1,205	1,205	73%
	Certificate in Engineering and Technology	2,225	1,522	1,475	1,503	1,503	101%
	Certificate in Heating and Ventilation Installation	1,266	710	658	614	614	116%
	Certificate in Vehicle Maintenance and Repair	12,879	5,930	5,593	5,382	5,382	110%
	Construction Award	21,281	13,447	12,624	21,476	21,474	63%
	GCSE ICT	1,469	1,126	985	103,437	99,114	1%
	NVQ in Engineering Maintenance and Installation	1,038	313	312	274	274	114%
	NVQ in Mechanical Engineering Services - Plumbing	5,140	1,463	1,426	1,483	1,483	99%
	NVQ in Performing Engineering Operations	14,777	9,106	8,694	8,545	8,545	107%
	NVQ in Vehicle Maintenance and Repair	9,611	2,622	2,584	2,223	2,223	118%
Engineering related	Certificate in Vehicle Body and Paint Operations	1,934	874	855	902	902	97%
	Certificate in Vehicle Fitting Operations	1,647	766	734	912	912	84%
	NVQ in Vehicle Body and Paint Operations	1,394	329	326	260	260	127%
	NVQ in Vehicle Fitting Operations	1,181	297	296	250	238	119%

Engineering level 3 (FE and Schools)

Table 6.4: QCF Level 3 Engineering qualifications with over 1000 Enrolments taken in FE compared to numbers taken in FE and Schools in England in 2008/09¹

FE only ² 16-18 ⁴					FE and Schools ³ 16-18 ⁴		
Engineering	Qualification title ⁵	Enrols	Completes ⁶	Achieves	Completes ⁷	Achieves	% Completes in FE/ FE & Schools ⁸
Engineering	Advanced Construction Award	2,114	1,270	1,056	2,191	2,191	58%
	Advanced Diploma for IT Professionals	1,278	1,085	1,073	1,096	1,096	99%
	BTEC National Award for IT Practitioners	4,024	3,027	2,768	3,450	3,448	88%
	BTEC National Award in Engineering	1,973	1,281	1,112	1,206	1,206	106%
	BTEC National Award in Music Technology	1,135	704	648	603	603	117%
	BTEC National Certificate for IT Practitioners	3,517	1,229	1,158	1,772	1,772	69%
	BTEC National Certificate in Electrical/Electronic Engineering	1,621	473	455	434	434	109%
	BTEC National Certificate in Manufacturing Engineering	1,724	499	475	472	472	106%
	BTEC National Certificate in Mechanical Engineering	1,146	365	347	262	262	139%
	BTEC National Certificate in Operations and Maintenance Engineering	1,252	395	385	390	390	101%
	BTEC National Diploma for IT Practitioners	10,801	3,564	3,411	4,075	4,075	87%
	BTEC National Diploma in Construction	2,236	845	799	852	852	99%
	BTEC National Diploma in Electrical/Electronic Engineering	1,447	468	426	467	467	100%
	BTEC National Diploma in Engineering	1,067	335	317	507	507	66%
	BTEC National Diploma in Music Technology	3,254	1,142	1,074	1,166	1,166	98%
	Certificate in Electrotechnical Technology	7,736	2,476	2,186	2,484	2,484	100%
	Certificate in Engineering	1,371	280	265	319	319	88%
	Certificate in Plumbing Studies	1,547	362	297	339	339	107%
	Diploma in Engineering and Technology	1,294	272	263	265	265	103%
	Diploma in Vehicle Maintenance and Repair	1,671	850	823	851	851	100%
	GCE A Level Design and Technology	1,738	1,672	1,620	15,284	14,911	11%
	GCE A Level ICT	7,739	7,256	6,892	23,047	21,518	31%
	GCE A Level Music Technology	1,266	1,187	1,149	3,151	3,017	38%
	GCE AS Level Design and Technology	3,085	2,620	2,297	18,938	16,255	14%
	GCE AS Level Electronics	1,467	1,225	1,042	1,697	1,414	72%
	GCE AS Level ICT	17,367	14,569	11,732	36,396	29,129	40%
	GCE AS Level Music Technology	2,253	1,971	1,718	4,517	3,952	44%
	NVQ for IT Professionals	1,396	1,022	1,019	1,059	1,059	97%
	NVQ in Electrotechnical Services	7,958	71	63	69	69	103%
	NVQ in Engineering Maintenance	3,048	46	45	40	40	115%
	NVQ in Mechanical Engineering Services - Plumbing (Domestic)	1,110	31	31	62	62	50%
	NVQ in Mechanical Manufacturing Engineering	2,448	81	80	77	77	105%
	NVQ in Vehicle Maintenance and Repair	2,043	634	630	570	570	111%

Engineering

Notes for Table 6.3 and Table 6.4.

1. All data refer to qualifications taken in that academic year 2008/09.
2. The FE data are from 2008/09 ILR F05, ILR C05, ILR U05 and ILR WBL p15.
The 'FE only' provision includes Independent providers and employers as well as General Further Education Colleges including Tertiary, Sixth Form Colleges, Special College - Agricultural and Horticultural Colleges and Art and Design Colleges, Specialist Colleges and External Institutions.
3. The 'FE and Schools' data are from two sources: the Award data in the 2008/09 Young Person Matched Attainment Dataset and the published KS5 SFR 2008/09.
Where the 'FE and Schools' data are based on the YPMD Award data, full discount rules have been applied.
These two data sources are equivalent, being based on awarding body data, rather than provider data.
The 'FE and Schools' data include independent schools and all provision in the maintained sector.
Therefore, the 'FE only' data include publicly funded learners only, while the 'FE and Schools' data includes privately funded learners.
4. To allow for comparison between different data sources, tables use age at 31 August of the academic year for all provision.
Both sets of provision include learners who would be 19 years old when taking the qualification. The 'FE and Schools' data include all under 16 year olds who took that qualification.
The 'FE only' data exclude 19 year olds who have been classed as 'Adult' provision
The 'FE and Schools' data includes all under 16 year olds who took that qualification.
5. All data have been aggregated to qualifications with the same qualification title at that QCF/NVQ level.
6. The 'FE only' Completes includes all learners who completed the programme of learning but their exam paper or assessments may not have sent to the Awarding body
7. To maximise consistency with other reports KS5 SFR has been used for the majority of GCE A levels and AS level data.
However, the 'grouping' of qualifications can be different between the between the two sets of data.
For example in the STEM classification GCE A level Mathematics does not include GCE A level Use of Mathematics, while the KS5 SFR does.
Where there are substantial differences in how qualifications have been grouped between the ILR and KS5 SFR, the YPMD Award data are used as they have the same groupings as the 'FE only' (ILR) data.
There are other smaller differences due to how completes and achieves are counted in the different data sets.
8. There are occasion where the number of learners in 'FE only' is greater than for 'FE and Schools', this reflects the differences in the sources of data and how outcomes are recorded and calculated.
For example, if the qualification is being taken as part of a framework, (eg an Apprenticeship), while the individual may have completed one or more of the component qualifications, the results may be notified to the Awarding body until the individual has completed the whole programme.
Another example is the differences in the providers' approach to 'cashing in' AS levels can produce differences in the Award data and funding data.
9. 'na' : Indicates robust data are not available, because equivalent data could not be identified across the data sets, or the version of the STEM qualification list used to generate the data for the report did not provide a comprehensive identification of that qualification (eg GCE A level and AS level Art and Design)
The electronic presentation uses the latest version of the STEM qualification list.
10. All of the above notes apply to the Level 2 provision, with the exception that 'FE and Schools' data describe all students who took that qualification, including KS4 students.
While the 'FE only' data describe learners 16 and above taking GCSEs after KS4.
11. Therefore, any comparisons between 'FE only' and 'FE and Schools' for level 2 qualifications should made with caution.

Section 7: Mathematics Qualifications in the FE and Skills Sector

70 This section and Sections 4, 5 and 6 follow a similar format. A description of the Tables can be found in the introduction to Sections 4-7, written by members of the Steering Group, on the content of the tables in Section 7 follow.

Notes on the Mathematics Tables

Rationale for categorisation

Qualifications were identified as Mathematics on the following bases:

- Entry to Level 5 qualifications which include mathematics and numeracy in the title are all relevant.
- The classification 'Mathematics' is used to classify qualifications identified as having mathematics as their primary content.
- The working group classified qualifications as 'Numeracy' if the development of numeracy is the primary purpose of that qualification and the qualification is unlikely to support development in mathematics or a STEM related subject, without additional mathematical learning.
- Qualifications which include Accounting, Book keeping, finance and related areas are deemed to include mathematical skills are classified as 'Mathematics-related'.
- Accountancy and finance based qualifications at Level 3 and above were generally not assessed as supporting progression in STEM subjects, as by this level the individual is likely to have committed to a finance-related pathway.
- Qualifications which include business, and do not major in finance were generally rated 'N' (not STEM).

All Tables in this section other than Tables 7.3 and 7.4 refer only to qualifications taken in the specified academic year in the FE and Skills sector in England by publicly funded learners.

Tables 7.3 and 7.4 include additional data about qualifications taken by 16-19 year olds in schools in England.

Example top-line numbers:

- 208,213 Mathematics qualifications achievements in the FE and Skills sector at Level 2 in 2008/09 (Table 7.1)
- 44,999 Mathematics qualifications achievements in the FE and Skills sector at Level 3 in 2008/09 (Table 7.2)
- 4,890 Mathematics-related Apprenticeships were being taken in 2008/09

- 5,309 Mathematics-related Advanced Apprenticeships were being taken in 2008/09
- In 2008/09, 24% of Mathematics A Levels were achieved in the FE Sector (15% of Further Mathematics A Levels). (Table 7.4)

Note: the terms 'Mathematics-related Apprenticeship' and 'Mathematics-related Advanced Apprenticeship' are problematic as most or even all STEM-related Apprenticeships are Mathematics-related. These figures denote Apprenticeship frameworks in Accountancy and so forth as distinct to Apprenticeship frameworks relating to Science, Technology or Engineering.

Mathematics level 2

Table 7.1: Popular qualifications in the Mathematics classification at QCF/NVQ level 2¹

Level 2		2008/09						2009/10	
S, T, E, M Area	Qualification title	N of Quals ²	Achieves	Completes	Withdws/ Transfers	Continues	Enrols	N of Quals	Enrols
Mathematics	Key Skills in Application of Number - level 2		97,506	111,838	29,413	57,489	198,740		194,668
	Certificate in Adult Numeracy		57,493	69,700	13,294	8,064	91,058		121,720
	GCSE Mathematics		40,290	42,398	10,436	269	53,103		54,716
	Brush Up Maths Level 2 (Online)		7,871	8,956	1,896	641	11,493		<1000 ⁴
	Award in Functional Skills Mathematics (QCF)		2,223	3,725	1,131	352	5,208		14,930
	Free-Standing Mathematics Qualification: Foundations of Advanced Mathematics		1,168	1,316	223	0	1,539		1,819
	Brush Up Maths Level 2 (CD-Rom)		910	978	83	18	1,079		<1000 ⁴
	Mathematics	Qualifications with 1000 or more enrolments	7	207,461	238,911	56,476	66,833	362,220	5
	Qualifications with 100 to 999 enrolments	9	706	1,221	261	0	1,482	8	1,959
	Qualifications with fewer than 100 enrolments	5	46	82	24	12	118	4	167
Total		21	208,213	240,214	56,761	66,845	363,820	17	389,979
Mathematics related	NVQ in Business-Improvement Techniques		20,683	20,921	3,228	14,153	38,302		32,118
	NVQ in Accounting		8,552	9,704	2,357	1,973	14,034		13,508
	Certificate in Accounting		2,060	2,685	394	81	3,160		<1000 ⁴
	Award in Computerised Accounts (QCF)		2,268	2,830	238	17	3,085		2,658
	Award in Book-Keeping and Accounts (QCF)		1,289	1,509	154	18	1,681		1,831
	Intermediate Certificate in Personal Finance		971	1,189	129	11	1,329		1,545
	Certificate in Learning Support		1,037	1,178	94	51	1,323		<1000 ⁴
	Certificate for Accounting Technicians (QCF)						<1000 ⁷		1,736
	NVQ in Retail Financial Services						<1000		1,042
	Mathematics related	Qualifications with 1000 or more enrolments	7	36,860	40,016	6,594	16,304	62,914	7
	Qualifications with 100 to 999 enrolments	8	2,758	3,523	612	564	4,699	14	6,190
	Qualifications with fewer than 100 enrolments	17	249	370	60	132	562	15	300
Total		32	39,867	43,909	7,266	17,000	68,175	36	60,928
Numeracy	Online - National Test in Adult Numeracy		23,396	24,912	876	976	26,764		<1000 ⁴
	Everyday Maths Skills - Whole Numbers (Level 2)		8,557	13,622	1,728	2,006	17,356		1,628
	Everyday Maths Skills - Fractions, Decimals and Percentages (Level 2)		9,257	13,357	1,560	2,007	16,924		1,593
	Preparing for Testing Numeracy Level 2 Online		12,763	14,533	994	1,391	16,918		1,002
	Everyday Maths Skills - Common Measures (Level 2)		9,600	13,032	1,573	1,934	16,539		1,510
	Everyday Maths Skills - Handling Data (Level 2)		8,691	11,243	942	1,322	13,507		1,017
	Everyday Maths Skills - Shape and Space (Level 2)		7,719	10,145	643	1,122	11,910		<1000 ⁴
	Basic Numeracy Course, Level 2		1,309	1,666	200	26	1,892		1,522
	Everyday Maths Skills (Level 2) - CD-ROM		516	710	177	317	1,204		<1000 ⁴
	Numeracy	Award in Personal Financial Planning					<1000		1,450
Numeracy	Qualifications with 1000 or more enrolments	9	81,808	103,220	8,693	11,101	123,014	7	9,722
	Qualifications with 100 to 999 enrolments	2	860	962	72	108	1,142	4	1,825
	Qualifications with fewer than 100 enrolments	14	190	331	70	40	441	13	208
Total		25	82,858	104,513	8,835	11,249	124,597	24	11,755

Achievements/ Enrolments as % for Learner Responsive Provision (2008/09 cohort)		
Base Enrols	Achieves ⁵	Rate
65,732	38,586	58.7%
62,849	40,060	63.7%
53,013	40,242	75.9%
-	-	-
5,128	2,206	43.0%
1,539	1,168	75.9%
-	-	-
-	-	-
8,985	5,954	66.3%
3,150	2,060	65.4%
3,055	2,251	73.7%
1,679	1,288	76.7%
1,329	971	73.1%
1,312	1,037	79.0%
-	-	-
-	-	-
1,483	1,266	85.4%
-	-	-

Mathematics level 2

Table 7.1.1: Mathematics related NVQs taken as part of an Apprenticeship (Level 2)³

Level 2		2008/09						2009/10	
S, T, E, M Area	Qualification title	N of Quals ²	Achieves	Completes	Withdws/ Transfers	Continues	Enrols	N of Quals	Enrols
Mathematics related	NVQ in Accounting		2,086	2106	526	1,402	4034		3625
	NVQ in Retail Financial Services		208	223	161	445	829		976
Mathematics	Qualifications with 500 or more enrolments	2	2,294	2,329	687	1,847	4,863	2	4,601
related	Qualifications with fewer than 500 enrolments	1	24	24	1	2	27	1	104
Total		3	2318	2353	688	1849	4890	3	4705

Mathematics level 3

Table 7.2: Popular qualifications in the Mathematics classification at QCF/NVQ level 3¹

Level 3		2008/09						2009/10	
S, T, E, M Area	Qualification title	N of Quals ²	Achieves	Completes	Withdraws/ Transfers	Continues	Enrols	N of Quals	Enrols
Mathematics	GCE AS Level Mathematics		21,141	26,450	4,790	140	31,380		33,754
	GCE A Level Mathematics		14,916	15,528	831	146	16,505		17,469
	Key Skills in Application of Number - level 3		2,003	3,259	582	688	4,529		3,107
	GCE AS Level Further Mathematics		2,486	2,858	326	178	3,362		3,625
	GCE AS Level Use of Mathematics		1,060	1,429	502	0	1,931		2,072
	GCE A Level Further Mathematics		1,438	1,474	165	193	1,832		2,227
	International Baccalaureate Diploma		512	583	181	669	1,433		1,509
	GCE AS Level Statistics						<1000 ⁷		1,037
Mathematics	Qualifications with 1000 or more enrolments	7	43,556	51,581	7,377	2,014	60,972	8	64,800
	Qualifications with 100 to 999 enrolments	5	1,207	1,493	304	1	1,798	5	1,234
	Qualifications with fewer than 100 enrolments	19	236	364	90	16	470	15	299
Total		31	44,999	53,438	7,771	2,031	63,240	28	66,333
Mathematics related	NVQ in Accounting		7,577	9,489	1,623	2,592	13,704		13,781
	GCE AS Level Accounting		4,212	5,793	1,052	0	6,845		6,421
	GCE A Level Accounting		2,604	2,754	141	1	2,896		2,924
	NVQ in Business-Improvement Techniques		1,029	1,044	398	1,196	2,638		2,768
	Certificate in Financial Studies		1,826	2,093	329	23	2,445		3,107
	Advanced Certificate in Accounting		941	1,316	177	82	1,575		<1000 ⁴
	Diploma for Accounting Technicians (QCF)						<1000		1,251
	NVQ in Retail Financial Services						<1000		1,046
Mathematics related	Qualifications with 1000 or more enrolments	6	18,189	22,489	3,720	3,894	30,103	7	31,298
	Qualifications with 100 to 999 enrolments	9	1,723	2,056	293	815	3,164	10	3,236
	Qualifications with fewer than 100 enrolments	24	406	561	65	166	792	22	641
Total		39	20,318	25,106	4,078	4,875	34,059	39	35,175

Achievements/ Enrolments as % for Learner Responsive Provision (2008/09 cohort)		
Base Enrols	Achieves ⁵	Rate
31,380	21,141	67.4%
16,495	14,906	90.4%
4,031	1,851	45.9%
3,362	2,486	73.9%
1,930	1,059	54.9%
1,831	1,437	78.5%
1,433	512	35.7%
8,188	4,930	60.2%
6,845	4,212	61.5%
2,896	2,604	89.9%
-	-	-
2,445	1,826	74.7%
1,575	941	59.7%

Mathematics level 3

Table 7.2.1: Mathematics related NVQs taken as part of an Advanced Apprenticeship (Level 3)³

Level 3		2008/09						2009/10	
S, T, E, M Area	Qualification title	N of Quals ²	Achieves	Completes	Withdraws/ Transfers	Continues	Enrols	N of Quals	Enrols
Mathematics related	NVQ in Accounting		2,228	2,254	529	1,887	4,670		4522
	NVQ in Retail Financial Services		80	81	38	519	638		987
Mathematics related	Qualifications with 500 or more enrolments	2	2,308	2,335	567	2,406	5,308	2	5,509
	Qualifications with fewer than 500 enrolments	1	1	1	0	0	1	0	0
Total		3	2,309	2,336	567	2,406	5,309	2	5,509

Notes for Table 7.1 to Table 7.2.1

- Data are from 2008/09 ILR L05, ILR C05, ILR U05 and ILR WBL p15, and for 2009/10 ILR L04, ILR C04, ILR U03 and ILR WBL p12.
Data cover all age groups in 'FE colleges', independent providers, third sector providers and employers.
'FE colleges' includes General Further Education Colleges including Tertiary, Sixth Form Colleges, Special College - Agricultural and Horticultural Colleges and Art and Design Colleges, Specialist Colleges and External Institutions.
- N of Quals' refers to the number of different qualification titles.
- All apprenticeships taken during 2008/09 and 2009/10 included an NVQ
- "<1000" indicates where there were less than 1000 enrolments within that qualification title in that year across of the FE and Skills sector.
However, numbers of enrolments, etc. for that qualification title are still counted in appropriated sub group total, e.g. 'Qualifications with 100 to 999 enrolments'.
- "-" indicates that there were <50 achieves in learner responsive provision in qualifications with that qualification title

Mathematics level 2 (FE and Schools)

Table 7.3: QCF Level 2 Mathematics qualifications with over 1000 Enrolments taken in FE compared to number taken in FE and Schools in England in 2008/09¹

FE only 16-18 ¹⁰					FE and Schools 16-18 ¹⁰		
Mathematics	Qualification title	Enrols	Completes	Achieves	Completes	Achieves	% Completes in FE/ FE & Schools
Mathematics	Award in Functional Skills Mathematics (QCF)	4,413	3,144	1,826	13,898	8,704	23%
	Certificate in Adult Numeracy	17,461	13,393	9,780	93,329	93,329	14%
	Free-Standing Mathematics Qualification: Foundations of Advanced Mathematics	1,479	1,270	1,126	2,143	1,885	59%
	GCSE Mathematics	35,981	28,639	27,424	656,208	638,399	4%
	Key Skills in Application of Number - level 2	88,227	59,675	47,640	38,049	38,049	157%
Mathematics related	Intermediate Certificate in Personal Finance	1,252	1,124	918	2,869	2,869	39%
	NVQ in Accounting	3,337	2,176	1,852	863	863	252%

Mathematics level 3 (FE and Schools)

Table 7.4: QCF Level 3 Mathematics qualifications with over 1000 Enrolments taken in FE compared to numbers taken in FE and Schools in England in 2008/09¹

FE only ² 16-18 ⁴					FE and Schools ³ 16-18 ⁴		
Mathematics	Qualification title ⁵	Enrols	Completes ⁶	Achieves	Completes ⁷	Achieves	% Completes in FE/ FE & Schools ⁸
Mathematics	GCE A Level Further Mathematics	1,770	1,420	1,390	9,460	9,306	15%
	GCE A Level Mathematics	15,599	14,710	14,167	61,844	60,152	24%
	GCE AS Level Further Mathematics	3,195	2,715	2,367	8,330	7,785	33%
	GCE AS Level Mathematics	30,132	25,519	20,421	70,882	57,653	36%
	GCE AS Level Use of Mathematics	1,874	1,396	1,034	1,913	1,403	73%
	International Baccalaureate Diploma	1,403	570	503	3,181	2,805	18%
	Key Skills in Application of Number - level 3	3,591	2,806	1,742	1,648	1,648	170%
Mathematics related	Certificate in Financial Studies	2,233	1,922	1,704	3,558	3,558	54%
	GCE A Level Accounting	2,702	2,576	2,441	3,646	3,404	71%
	GCE AS Level Accounting	6,643	5,637	4,101	6,959	4,899	81%
	NVQ in Accounting	2,079	1,273	964	754	754	169%

Mathematics

Notes for Table 7.3 and Table 7.4.

1. All data refer to qualifications taken in that academic year 2008/09.
2. The FE data are from 2008/09 ILR L05, ILR C05, ILR U05 and ILR WBL p15.
The 'FE only' provision includes Independent providers and employers as well as General Further Education Colleges including Tertiary, Sixth Form Colleges, Special College - Agricultural and Horticultural Colleges and Art and Design Colleges, Specialist Colleges and External Institutions.
3. The 'FE and Schools' data are from two sources: the Award data in the 2008/09 Young Person Matched Attainment Dataset and the published KS5 SFR 2008/09.
Where the 'FE and Schools' data are based on the YPMD Award data, full discount rules have been applied.
These two data sources are equivalent, being based on awarding body data, rather than provider data.
The 'FE and Schools' data include independent schools and all provision in the maintained sector.
Therefore, the 'FE only' data include publicly funded learners only, while the 'FE and Schools' data includes privately funded learners.
4. To allow for comparison between different data sources, tables use age at 31 August of the academic year for all provision.
Both sets of provision include learners who would be 19 years old when taking the qualification. The 'FE and Schools' data include all under 16 year olds who took that qualification.
The 'FE only' data exclude 19 year olds who have been classed as 'Adult' provision
The 'FE and Schools' data includes all under 16 year olds who took that qualification.
5. All data have been aggregated to qualifications with the same qualification title at that QCF/NVQ level.
6. The 'FE only' Completes includes all learners who completed the programme of learning but their exam paper or assessments may not have sent to the Awarding body
7. To maximise consistency with other reports KS5 SFR has been used for the majority of GCE A levels and AS level data.
However, the 'grouping' of qualifications can be different between the between the two sets of data.
For example in the STEM classification GCE A level Mathematics does not include GCE A level Use of Mathematics, while the KS5 SFR does.
Where there are substantial differences in how qualifications have been grouped between the ILR and KS5 SFR, the YPMD Award data are used as they have the same groupings as the 'FE only' (ILR) data.
There are other smaller differences due to how completes and achieves are counted in the different data sets.
8. There are occasion where the number of learners in 'FE only' is greater than for 'FE and Schools', this reflects the differences in the sources of data and how outcomes are recorded and calculated.
For example, if the qualification is being taken as part of a framework, (eg an Apprenticeship), while the individual may have completed one or more of the component qualifications, the results may be notified to the Awarding body until the individual has completed the whole programme.
Another example is the differences in the providers' approach to 'cashing in' AS levels can produce differences in the Award data and funding data.
9. 'na' : Indicates robust data are not available, because equivalent data could not be identified across the data sets, or the version of the STEM qualification list used to generate the data for the report did not provide a comprehensive identification of that qualification (eg GCE A level and AS level Art and Design)
The electronic presentation uses the latest version of the STEM qualification list.
10. All of the above notes apply to the Level 2 provision, with the exception that 'FE and Schools' data describe all students who took that qualification, including KS4 students.
While the 'FE only' data describe learners 16 and above taking GCSEs after KS4.
11. Therefore, any comparisons between 'FE only' and 'FE and Schools' for level 2 qualifications should made with caution.

Section 8: A levels and 14-19 Diplomas in FE and Skills sector

GCE A levels

71 Table 8.1 reports on A levels relevant to science, technology, engineering and mathematics. Although these data are contained in the Sections 4 through to 7 this report, the A levels are split across the sections, and attainment grades are not reported. While the quality of grade attainment data has improved substantially in recent ILR collections, for 2008/09 data it is still considered as not fully reliable by the Data Service. The most reliable source of data on grade attainment is the published awarding body data, and this was available for the FE colleges in England in the 2008/09 Key Stage 5 Statistical First Release.

72 The constraint in using this data is that the awarding body data are not directly comparable with the data presented in the rest of the report. To facilitate comparison, the relevant ILR based data have been included in Table 8.1. Further explanatory notes are included with the tables.

73 ILR based grade data will be available in the electronic presentation.

Table 8.1 : GCE A level examination results in the Further Education Sector Colleges by subject and grade

Data: Awarding body data (KS5 SFR)¹
Year: 2008/09 (Revised)

Coverage: England²
16-18 year olds³

Data: FE collections⁴
Year: 2008/09

Coverage: England⁵
All ages⁵

A level subject	Percentage achieving grade							Achieves	Total Entries	Achieves	Completions
	A	B	C	D	E	Other ⁷	A-E				
Biological Sciences	21.2	22.9	21.5	18.9	12.4	3.0	97.0	11,166	11,511	11,531	12,086 GCE A Level Biology
Chemistry	26.3	24.8	19.9	15.3	10.7	3.0	97.0	8,479	8,741	8,846	9,262 GCE A Level Chemistry
Physics	25.7	19.5	20.5	17.9	12.7	3.7	96.3	5,156	5,354	5,062	5,342 GCE A Level Physics
Other Science	21.1	22.0	23.2	19.1	x	x	x	-	2,484	3,002	3,145 Total 'Other Sciences' ⁸
										319	342 GCE A Level Applied Science
										285	318 GCE A Level Applied Science (Double Award)
										5	5 GCE A Level Archaeology
										655	672 GCE A Level Electronics
										35	35 GCE A Level Engineering
										838	887 GCE A Level Environmental Science
										51	52 GCE A Level Science
										11	13 GCE A Level Science in Society
										803	821 GCE A Level Geology
Geography	24.4	27.0	25.3	16.4	6.1	0.8	99.2	5,319	5,362	5,252	5,300 Total 'Geography'
										5,174	5,222 GCE A Level Geography
										78	78 GCE A Level Environmental Studies
Psychology	17.9	25.4	25.7	18.8	9.9	2.3	97.7	17,528	17,941	18,061	18,656 GCE A Level Psychology
Mathematics	35.0	23.4	18.4	13.5	7.9	1.9	98.1	15,245	15,540	15,270	15,901 Total 'Mathematics'
										14,916	15,528 GCE A Level Mathematics
										354	373 GCE A Level Statistics
Further Mathematics	53.5	22.7	12.8	7.1	3.2	0.8	99.2	1,926	1,942	1,438	1,474 GCE A Level Further Maths
Accounting and Finance	12.5	23.9	24.4	21.8	13.3	4.0	96.0	2,568	2,675	2,604	2,754 GCE A Level Accounting
Design and Technology	15.5	23.5	26.6	22.1	9.8	2.5	97.5	1,637	1,679	1,633	1,686 GCE A Level Design and Technology
ICT total	9.9	18.7	25.7	25.8	16.1	3.9	96.1	5,051	5,257	7,901	8,375 Totals ICT
Computer Studies	15.3	21.1	22.7	21.9	14.9	4.1	95.9	1,984	2,069	799	889 GCE A Level ICT (Double Award)
ICT	6.4	17.1	27.6	28.3	16.8	3.8	96.2	3,067	3,188	7,102	7,486 GCE A Level ICT
Other Communication Studies ⁹	13.4	34.4	35.9	12.9	2.4	0.9	99.1	5,581	5,632	1,169	1,207 GCE A Level Music Technology ⁹
S,T,E,M Totals	24.7	24.3	22.9	18.1	10.3	2.5	97.5	74,075	76,002	77,598	80,836
All subjects in FE Colleges	19.7	25.1	26.2	18.2	8.7	2.0	98.0	220,124	224,616	na	na

Notes

1. The data are taken directly from the 2008/09 Key Stage 5 Statistical First Release
2. The data cover FE Colleges and 6th Form Colleges in England, not independent providers
3. The data include under 16 year olds and 19 year olds who took these qualifications. For all learners age is at the start of the 2008/09 academic year i.e. 31 August 2008.
4. The FE data is included to provide the context so reference can be made to previous tables, and is from 2008/09 ILR F05 and ILR WBL p15.
5. The data includes independent providers as well as General Further Education Colleges including Tertiary, and Sixth Form Colleges, Special College - Agricultural and Horticultural Colleges and Art and Design Colleges, Specialist Colleges and External Institutions.
6. The data is for all learners funded by the Learning and Skills Council and includes under 16 year olds and 19 year olds who took the qualifications and were not funded as adults.
7. The KS5 SFR 'Other' includes ungraded, no award (absent/declined) and pending
8. The qualifications included in the 'Total' for a subject area in FE data may not match those in KS5 SFR due to differences in the grouping of qualifications. The data provides the best approximation.
9. Other Communication Studies' and 'GCE A level Music Technology' are not included in the STEM Totals and percentages, as it is not possible to match data across the data sets.
x - figures suppressed due to small numbers

14-19 Diplomas

74 One of the requirements in the project specification was to report on the take up and achievement in 14-19 Diplomas (at QCF levels 1, 2 and 3) in the FE and Skills sector (as distinct to 14-19 Diplomas taken in both schools and the FE & Skills sector which is reported by JCQ). 14-19 Diplomas are programmes of learning, containing a number of qualifications and learning aims and there are key differences between how programme outcomes are reported in the sector and how qualifications are reported. Again to facilitate comparison the constituent qualifications are reported in Table 8.2.1 to Table 8.2.3 .

75 Further explanatory notes are included with the tables.

Table 8.2.1 : Take up and Achievement in 14-19 Diplomas (QCF level 1) in the FE and Skills sector in England¹

STEM Classification	QCF/ NVQ level	Qualification title ³	2008/09 ²					2009/10 ²	
			Achieves ⁴	Completes	Withdws/ Transfers	Continues	Enrolments	Enrolments	Withdws/ Transfers ⁵
Engineering	1	Foundation Diploma in Construction and the Built Environment	7	25	41	0	66	18	2
Engineering	1	Principal Learning in Construction and the Built Environment	7	19	30	0	49	33	7
Engineering	1	Generic Diploma Programme Aim for the Foundation Diploma in Construction and the Built Environment	1	1	0	0	1	15	4
Engineering	1	Foundation Diploma in Engineering	7	60	30	5	95	33	7
Engineering	1	Principal Learning in Engineering	9	21	7	26	54	35	8
Technology & Engineering	1	Foundation Diploma in Information Technology	32	62	27	0	89	244	41
Technology & Engineering	1	Principal Learning in IT	76	89	27	0	116	203	29
Technology & Engineering	1	Generic Diploma Programme Aim for the Foundation Diploma in Information Technology	14	20	2	0	22	16	2
Mathematics related	1	Foundation Diploma in Business, Administration and Finance	-	-	-	-	-	106	15
Mathematics related	1	Principal Learning in Business, Administration and Finance	-	-	-	-	-	81	12
Mathematics related	1	Generic Diploma Programme Aim for the Foundation Diploma in Business, Administration and Finance	-	-	-	-	-	10	3
Totals			153	297	164	31	492	794	130

Notes

- All data refer to qualifications taken in that academic year in FE and Skills sector by learners funded by the Learning Skills Council and for 2009/10 the Skills Funding Agency or Young People's Learning Agency.
- Data is from 2008/09 ILR L05, ILR C05, ILR U05 and ILR WBL p15, and for 2009/10 ILR L04, ILR C04, ILR U03 and ILR WBL p12.
Data covers all age groups in 'FE colleges', independent providers, third sector providers and employers. There were a number of 19+ year olds taking 14-19 Diplomas in the data.
- As 14-19 Diplomas are programmes of learning rather than qualifications, the data describes the component qualifications rather than the overall framework
Qualifications have been grouped by qualification title at that QCF/NVQ level, as specified in the list of identified S,T, E or M qualifications.
- The low number of 'Achieves' in Advanced Diplomas is because they are taken over two years
and that as a programme of learning 'Achievements' of component qualifications are not always registered as they occur.
- The Enrolments in 2009/10 include the 'Continues' from 2008/09

Table 8.2.2 : Take up and Achievement in 14-19 Diplomas (QCF level 2) in the FE and Skills sector in England¹

STEM Classification	QCF/ NVQ level	Qualification title ³	2008/09 ²					2009/10 ²	
			Achieves ⁴	Completes	Withdraws/ Transfers	Continues	Enrolments	Enrolments ⁵	Withdraws/ Transfers ⁶
Engineering	2	Higher Diploma in Construction and the Built Environment	7	35	12	3	50	69	20
Engineering	2	Principal Learning in Construction and the Built Environment	11	42	17	0	59	53	12
Engineering	2	Higher Diploma in Engineering	14	43	22	21	86	97	21
Engineering	2	Principal Learning in Engineering	31	46	15	7	68	108	24
Engineering	2	Generic Diploma Programme Aim for the Higher Diploma in Engineering	-	-	-	-	-	19	4
Technology & Engineering	2	Higher Diploma in Information Technology	30	76	25	0	101	245	38
Technology & Engineering	2	Principal Learning in IT	55	69	38	1	108	234	31
Technology & Engineering	2	Generic Diploma Programme Aim for the Higher Diploma in Information Technology	2	20	10	1	31	46	4
Science	2	Principal Learning in Environmental and Land-based studies	-	-	-	-	-	32	7
Science	2	Generic Diploma Programme Aim for the Higher Diploma in Environmental and Land Based Studies	-	-	-	-	-	14	5
Mathematics related	2	Higher Diploma in Business, Administration and Finance	-	-	-	-	-	142	20
Mathematics related	2	Principal Learning in Business, Administration and Finance	-	-	-	-	-	141	24
Mathematics related	2	Generic Diploma Programme Aim for the Higher Diploma in Business, Administration and Finance	-	-	-	-	-	18	3
Totals			150	331	139	33	503	1218	213

Notes

- All data refer to qualifications taken in that academic year in FE and Skills sector by learners funded by the Learning Skills Council and for 2009/10 the Skills Funding Agency or Young People's Learning Agency.
- Data is from 2008/09 ILR L05, ILR C05, ILR U05 and ILR WBL p15, and for 2009/10 ILR L04, ILR C04, ILR U03 and ILR WBL p12.
Data covers all age groups in 'FE colleges', independent providers, third sector providers and employers. There were a number of 19+ year olds taking 14-19 Diplomas in the data.
- As 14-19 Diplomas are programmes of learning rather than qualifications, the data describes the component qualifications rather than the overall framework
Qualifications have been grouped by qualification title at that QCF/NVQ level, as specified in the list of identified S,T, E or M qualifications.
- The low number of 'Achieves' in Advanced Diplomas is because they are taken over two years
and that as a programme of learning 'Achievements' of component qualifications are not always registered as they occur.
- The Enrolments in 2009/10 include the 'Continues' from 2008/09

Table 8.2.3 : Take up and Achievement in 14-19 Diplomas (QCF level 3) in the FE and Skills sector in England

STEM Classification	QCF/ NVQ level	Qualification title ³	2008/09 ²					2009/10 ²	
			Achieves ⁴	Completes	Withdraws/ Transfers	Continues	Enrolments	Enrolments ⁵	Withdraws/ Transfers ⁶
Engineering	3	Advanced Diploma in Construction and the Built Environment	0	0	19	72	91	265	48
Engineering	3	Principal Learning in Construction and the Built Environment	0	0	31	91	122	256	39
Engineering	3	Generic Diploma Programme Aim for the Advanced Diploma in Construction and the Built Environment	0	0	1	23	24	31	1
Engineering	3	Generic Diploma Programme Aim for the Progression Diploma in Construction and the Built Environment	-	-	-	-	-	2	0
Engineering	3	Advanced Diploma in Engineering	0	0	77	216	293	548	55
Engineering	3	Principal Learning in Engineering	0	0	85	201	286	581	71
	3	Generic Diploma Programme Aim for the Advanced Diploma in Engineering	0	0	8	15	23	61	4
Technology & Engineering	3	Advanced Diploma in Information Technology	0	0	37	122	159	455	53
Technology & Engineering	3	Principal Learning in IT	0	0	42	136	178	357	41
Technology & Engineering	3	Generic Diploma Programme Aim for the Advanced Diploma in Information Technology	0	0	4	13	17	49	16
Technology & Engineering	3	Progression Diploma in Information Technology	0	0	2	9	11	11	1
Science	3	Advanced Diploma in Environmental and Land Based Studies	-	-	-	-	-	21	2
Science	3	Principal Learning in Environmental and Land-based studies	-	-	-	-	-	21	1
Mathematics related	3	Advanced Diploma in Business, Administration and Finance	-	-	-	-	-	345	52
Mathematics related	3	Principal Learning in Business, Administration and Finance	-	-	-	-	-	316	57
Mathematics related	3	Progression Diploma in Business, Administration and Finance	-	-	-	-	-	11	3
Totals			0	0	306	898	1204	3330	444

Notes

1. All data refer to qualifications taken in that academic year in FE and Skills sector by learners funded by the Learning Skills Council and for 2009/10 the Skills Funding Agency or Young People's Learning Agency.
2. Data is from 2008/09 ILR L05, ILR C05, ILR U05 and ILR WBL p15, and for 2009/10 ILR L04, ILR C04, ILR U03 and ILR WBL p12.
Data covers all age groups in 'FE colleges', independent providers, third sector providers and employers. There were a number of 19+ year olds taking 14-19 Diplomas in the data.
3. As 14-19 Diplomas are programmes of learning rather than qualifications, the data describes the component qualifications rather than the overall framework.
Qualifications have been grouped by qualification title at that QCF/NVQ level, as specified in the list of identified S, T, E or M qualifications.
4. The low number of 'Achieves' in Advanced Diplomas is because they are taken over two years and that as a programme of learning 'Achievements' of component qualifications are not always registered as they occur.
5. The Enrolments in 2009/10 include the 'Continues' from 2008/09

Section 9: Number of Learners taking S,T,E,M qualifications in the FE & Skills sector

76 All of the previous tables have reported on the number of qualifications taken, completed or achieved. The number of individual learners who are taking the identified Science, Technology, Engineering or Mathematics qualifications are also of interest.

77 One feature of learner data is that it is possible to report on the characteristics of the learner. In the report this is limited to age and gender, but further information will be available in the electronic presentations.

78 The main difference between learner numbers and qualification numbers is that a learner can take more than one qualification. However, just reporting learner numbers can disguise the fact that some learners are taking sizeable programmes, while others may be taking a qualification of a few hours duration. While both type of learning is important, it can make interpreting learner numbers problematic.

79 One way to facilitate interpretation is to provide some indication of the size of the learning programme. In the following tables three indications of size are given, each addressing a different aspect:

- a) the actual number of qualifications a learner is taking within the academic year
- b) whether the learner is taking a programme of learning equivalent to a Full level 3 (equivalent in size to taking 2 A levels over 2 years) or for learners taking QCF level 2 qualifications a Full level 2 (equivalent in size to taking 5 GCSEs). The value of these indicators is that have been reported in Statistical First Release for the sector, so they aid comparison with other provision.
- c) whether the learner is taking a programme of learning equivalent in size to three A levels (more accurately three A2 or AS levels within an academic year). The value of this indicator is that certain key qualifications in the Engineering and Technology areas are of this size.

80 The tables are organised by S,T,E,M area and describe learner numbers taking QCF level 2 qualifications and QCF level 3 qualifications.

81 Further explanatory notes are included with the tables.

Learners taking Science in FE and Skills sector

Table 9.1: Learners taking QCF/NVQ Level 3 Science qualifications in the FE and Skills sector in England¹

Level 3	S, T, E, M area	Year	Age	Gender	Number of learners taking 1, 2, 3, 4 or 5 or more Science qualifications ⁴					Learners taking Full level 3 ⁵	Learner taking equiv to 3 A levels ⁶	Total learners ²
					1 qual	2 quals	3 quals	4 quals	5 +quals			
Science ³	2008/09	16-18	F	51,039	17,248	6,125	649	61	56,083	7,223	75,122	
			M	34,535	15,151	5,636	738	71	42,617	6,825	56,131	
		19+	F	12,712	3,410	245	79	5	9,828	447	16,451	
			M	5,568	813	241	40	5	4,194	393	6,667	
		All	All	103,854	36,622	12,247	1,506	142	112,722	14,888	154,371	
		2009/10	16-18	F	52,192	18,081	6,752	707	76	58,894	7,905	77,808
				M	36,761	16,286	6,319	809	79	46,040	7,495	60,254
			19+	F	11,949	3,856	246	108	12	11,329	517	16,171
	M			6,861	911	275	59	4	5,900	447	8,110	
	All	All	107,763	39,134	13,592	1,683	171	122,163	16,364	162,343		

Table 9.2: Learners taking QCF/NVQ Level 2 Science qualifications in the FE and Skills sector in England¹

Level 2	S, T, E, M area	Year	Age	Gender	Number of learners taking 1, 2, 3, 4 or 5 or more Science qualifications ⁴					Learners taking Full level 2 ⁷	not applicable ⁸	Total learners ²
					1 qual	2 quals	3 quals	4 quals	5 +quals			
Science ³	2008/09	16-18	F	8,464	1,143	362	27	3	4,967	0	9,999	
			M	6,441	945	425	27	5	4,733	0	7,843	
		19+	F	14,100	1,188	89	27	6	8,254	0	15,410	
			M	12,580	262	58	5	0	10,272	0	12,905	
		All	All	41,585	3,538	934	86	14	28,226	0	46,157	
		2009/10	16-18	F	9,014	1,147	398	24	0	5,475	0	10,583
				M	8,540	1,086	423	22	0	6,556	0	10,071
			19+	F	13,777	1,292	68	30	4	8,105	0	15,171
	M			17,797	655	96	7	20	13,949	0	18,575	
	All	All	49,128	4,180	985	83	24	34,085	0	54,400		

Notes

- All data refer to qualifications taken in that academic year 2008/09 in FE and Skills sector by learners funded by the Learning Skills Council . Data are from 2008/09 ILR L05, ILR C05, ILR U05 and ILR WBL p15. Data cover all age groups in 'FE colleges' , independent providers, third sector providers and employers.
- Learners undertaking/achieving more than one course will appear only once in the 'Total learners' category for each data collection. However, learners that are included in different data collections, whether that relates to different years or different funding streams, will be counted more than once. All learners undertaking/achieving a full level 2 or 3 qualification are not counted again in the 'Total learners'
- As no criteria have been agreed on how to classify learners who take qualifications if more than one STEM classification, the count of learners is restricted to a single classification, eg 'Technology' and not 'Technology related', as this produced the most robust count. As there are learners who are taking qualification in different S,T,E,M areas, these learners have been counted more than once.
- The number of learners taking different numbers of qualifications do sum to the Total learners as the qualification categories are mutually exclusive.
- Full level 3 is a learning programme equivalent to a learner taking qualifications of the same size as two AS levels in one year. This has been a standard measure of programme size.
- A 'Learner taking equiv to 3 A levels' is the size of programme equivalent to 3 AS levels or 3 A2 levels in one year. This is not a standard measure of programme size and it has been included for information only.
- Full level 2 is a learning programme equivalent to 5 GCSEs.
- The level 3 measure of a learning programme equivalent to 3 AS or A2 in a year is not applicable to level 2 programmes.

Learners taking Technology in FE and Skills sector

Table 9.3: Learners taking QCF/NVQ Level 3 Technology qualifications in the FE and Skills sector in England¹

S,T,E, M area	Year	Age	Gender	Number of learners taking 1, 2,3, 4 or 5 or more Technology qualifications ⁴					Learners taking Full level 3 ⁵	Learner taking equiv to 3 A levels ⁶	Total learners ²
				1 qual	2 quals	3 quals	4 quals	5 +quals			
Technology ³	2008/09	16-18	F	16,404	1,256	58	1	0	13,392	290	17,719
			M	45,785	7,139	436	44	1	41,540	2,227	53,405
		19+	F	2,453	316	9	3	0	1,868	102	2,781
			M	10,975	2,398	140	40	3	9,960	696	13,556
	All	All	75,617	11,109	643	88	4	66,760	3,315	87,461	
	2009/10	16-18	F	16,643	1,537	58	8	2	14,041	587	18,248
			M	47,156	8,638	401	48	4	44,849	3,433	56,247
		19+	F	2,546	329	7	8	1	1,988	109	2,891
			M	12,481	2,857	88	62	2	11,907	984	15,490
		All	All	78,826	13,361	554	126	9	72,785	5,113	92,876

Table 9.4: Learners taking QCF/NVQ Level 2 Technology qualifications in the FE and Skills sector in England¹

S,T,E, M area	Year	Age	Gender	Number of learners taking 1, 2,3, 4 or 5 or more Technology qualifications ⁴					Learners taking Full level 2 ⁷	not applicable ⁸	Total learners ²
				1 qual	2 quals	3 quals	4 quals	5 +quals			
Technology ³	2008/09	16-18	F	2,788	94	1	1	0	1,692	0	2,884
			M	10,795	713	32	10	0	8,680	0	11,550
		19+	F	1,659	50	2	0	0	628	0	1,711
			M	6,861	508	34	2	0	3,634	0	7,405
	All	All	22,103	1,365	69	13	0	14,634	0	23,550	
	2009/10	16-18	F	2,713	161	7	2	1	1,709	0	2,884
			M	10,028	1,254	37	37	4	9,088	0	11,360
		19+	F	1,590	93	7	2	0	692	0	1,692
			M	6,634	982	54	10	0	4,421	0	7,680
		All	All	20,965	2,490	105	51	5	15,910	0	23,616

Notes

- All data refer to qualifications taken in that academic year 2008/09 in FE and Skills sector by learners funded by the Learning Skills Council . Data are from 2008/09 ILR L05, ILR C05, ILR U05 and ILR WBL p15. Data cover all age groups in 'FE colleges' , independent providers, third sector providers and employers.
- Learners undertaking/achieving more than one course will appear only once in the 'Total learners' category for each data collection. However, learners that are included in different data collections, whether that relates to different years or different funding streams, will be counted more than once. All learners undertaking/achieving a full level 2 or 3 qualification are not counted again in the 'Total learners'
- As no criteria have been agreed on how to classify learners who take qualifications if more than one STEM classification, the count of learners is restricted to a single classification, eg 'Technology' and not 'Technology related', as this produced the most robust count. As there are learners who are taking qualification in different S,T,E,M areas, these learners have been counted more than once.
- The number of learners taking different numbers of qualifications do sum to the Total learners as the qualification categories are mutually exclusive.
- Full level 3 is a learning programme equivalent to a learner taking qualifications of the same size as two AS levels in one year. This has been a standard measure of programme size.
- A 'Learner taking equiv to 3 A levels' is the size of programme equivalent to 3 AS levels or 3 A2 levels in one year. This is not a standard measure of programme size and it has been included for information only.
- Full level 2 is a learning programme equivalent to 5 GCSEs.
- The level 3 measure of a learning programme equivalent to 3 AS or A2 in a year is not applicable to level 2 programmes.

Learners taking Engineering in FE and Skills sector

Table 9.5: Learners taking QCF/NVQ Level 3 Engineering qualifications in the FE and Skills sector in England¹

Level 3				Number of learners taking 1, 2, 3, 4 or 5 or more Engineering qualifications ⁴					Learners taking Full level 3 ⁵	Learner taking equiv to 3 A levels ⁶	Total learners ²
S,T,E, M area	Year	Age	Gender	1 qual	2 quals	3 quals	4 quals	5 +quals			
Engineering ³	2008/09	16-18	F	12,976	1,323	46	7	0	10,465	446	14,352
			M	60,715	24,510	966	333	43	70,471	8,866	86,567
		19+	F	3,571	994	46	14	16	3,500	356	4,641
			M	61,706	34,862	1,787	719	140	72,480	10,291	99,214
		All	All	138,968	61,689	2,845	1,073	199	156,916	19,959	204,774
	2009/10	16-18	F	12,887	1,572	50	11	3	10,817	710	14,523
			M	59,677	24,063	879	301	42	68,435	9,410	84,962
		19+	F	3,534	1,030	39	26	21	3,532	400	4,650
			M	54,902	35,970	1,545	794	157	71,359	10,404	93,368
			All	All	131,000	62,635	2,513	1,132	223	154,143	20,924

Table 9.6: Learners taking QCF/NVQ Level 2 Engineering qualifications in the FE and Skills sector in England¹

Level 2				Number of learners taking 1, 2, 3, 4 or 5 or more Engineering qualifications ⁴					Learners taking Full level 2 ⁷	not applicable ⁸	Total learners ²
S,T,E, M area	Year	Age	Gender	1 qual	2 quals	3 quals	4 quals	5 +quals			
Engineering ³	2008/09	16-18	F	4,052	452	13	16	2	3,478	0	4,535
			M	69,970	22,040	589	584	118	87,458	0	93,301
		19+	F	13,975	501	10	6	1	13,083	0	14,493
			M	148,686	13,991	550	460	112	147,411	0	163,799
		All	All	236,683	36,984	1,162	1,066	233	251,430	0	276,128
	2009/10	16-18	F	3,404	515	12	10	2	3,061	0	3,943
			M	52,036	20,792	550	496	95	68,638	0	73,969
		19+	F	11,431	625	17	12	0	10,879	0	12,085
			M	122,666	14,860	580	468	168	120,697	0	138,742
			All	All	189,537	36,792	1,159	986	265	203,275	0

Notes

- All data refer to qualifications taken in that academic year 2008/09 in FE and Skills sector by learners funded by the Learning Skills Council . Data are from 2008/09 ILR L05, ILR C05, ILR U05 and ILR WBL p15. Data cover all age groups in 'FE colleges' , independent providers, third sector providers and employers.
- Learners undertaking/achieving more than one course will appear only once in the 'Total learners' category for each data collection. However, learners that are included in different data collections, whether that relates to different years or different funding streams, will be counted more than once. All learners undertaking/achieving a full level 2 or 3 qualification are not counted again in the 'Total learners'
- As no criteria have been agreed on how to classify learners who take qualifications if more than one STEM classification, the count of learners is restricted to a single classification, eg 'Technology' and not 'Technology related', as this produced the most robust count. As there are learners who are taking qualification in different S,T,E,M areas, these learners have been counted more than once.
- The number of learners taking different numbers of qualifications do sum to the Total learners as the qualification categories are mutually exclusive.
- Full level 3 is a learning programme equivalent to a learner taking qualifications of the same size as two AS levels in one year. This has been a standard measure of programme size.
- A 'Learner taking equiv to 3 A levels' is the size of programme equivalent to 3 AS levels or 3 A2 levels in one year. This is not a standard measure of programme size and it has been included for information only.
- Full level 2 is a learning programme equivalent to 5 GCSEs.
- The level 3 measure of a learning programme equivalent to 3 AS or A2 in a year is not applicable to level 2 programmes.

Learners taking Mathematics in FE and Skills sector

Table 9.7: Learners taking QCF/NVQ Level 3 Mathematics qualifications in the FE and Skills sector in England¹

Level 3				Number of learners taking 1, 2, 3, 4 or 5 or more Mathematics qualifications ⁴					Learners taking Full level 3 ⁵	Learner taking equiv to 3 A levels ⁶	Total learners ²
S, T, E, M area	Year	Age	Gender	1 qual	2 quals	3 quals	4 quals	5 +quals			
Mathematics ³	2008/09	16-18	F	17,030	2,919	398	57	2	16,655	296	20,406
			M	23,528	4,819	634	101	3	22,816	470	29,085
		19+	F	1,059	114	19	2	0	460	12	1,194
			M	1,663	178	26	1	0	707	23	1,868
	All	All	43,280	8,030	1,077	161	5	40,638	801	52,553	
	2009/10	16-18	F	18,859	2,711	346	12	6	17,950	291	21,934
			M	25,690	4,990	581	43	11	24,302	462	31,315
		19+	F	883	90	13	2	0	420	15	988
			M	1,678	210	26	2	1	778	30	1,917
	All	All	47,110	8,001	966	59	18	43,450	798	56,154	

Table 9.8: Learners taking QCF/NVQ Level 2 Mathematics qualifications in the FE and Skills sector in England¹

Level 2				Number of learners taking 1, 2, 3, 4 or 5 or more Mathematics qualifications ⁴					Learners taking Full level 2 ⁷	not applicable ⁸	Total learners ²
S, T, E, M area	Year	Age	Gender	1 qual	2 quals	3 quals	4 quals	5 +quals			
Mathematics ³	2008/09	16-18	F	54,758	3,868	173	71	48	14,861	0	58,918
			M	76,508	4,121	221	62	16	35,216	0	80,928
		19+	F	109,556	3,092	156	39	21	12,277	0	112,864
			M	90,767	3,274	197	20	15	21,053	0	94,273
	All	All	331,589	14,355	747	192	100	83,407	0	346,983	
	2009/10	16-18	F	56,910	3,379	147	107	18	14,841	0	60,561
			M	75,214	3,442	162	73	4	31,925	0	78,895
		19+	F	125,694	3,719	153	24	14	14,180	0	129,604
			M	101,993	3,462	203	25	19	21,191	0	105,702
	All	All	359,811	14,002	665	229	55	82,137	0	374,762	

Notes

- All data refer to qualifications taken in that academic year 2008/09 in FE and Skills sector by learners funded by the Learning Skills Council . Data are from 2008/09 ILR L05, ILR C05, ILR U05 and ILR WBL p15. Data cover all age groups in 'FE colleges' , independent providers, third sector providers and employers.
- Learners undertaking/achieving more than one course will appear only once in the 'Total learners' category for each data collection. However, learners that are included in different data collections, whether that relates to different years or different funding streams, will be counted more than once. All learners undertaking/achieving a full level 2 or 3 qualification are not counted again in the 'Total learners'
- As no criteria have been agreed on how to classify learners who take qualifications if more than one STEM classification, the count of learners is restricted to a single classification, eg 'Technology' and not 'Technology related', as this produced the most robust count. As there are learners who are taking qualification in different S,T,E,M areas, these learners have been counted more than once.
- The number of learners taking different numbers of qualifications do sum to the Total learners as the qualification categories are mutually exclusive.
- Full level 3 is a learning programme equivalent to a learner taking qualifications of the same size as two AS levels in one year. This has been a standard measure of programme size.
- A 'Learner taking equiv to 3 A levels' is the size of programme equivalent to 3 AS levels or 3 A2 levels in one year. This is not a standard measure of programme size and it has been included for information only.
- Full level 2 is a learning programme equivalent to 5 GCSEs.
- The level 3 measure of a learning programme equivalent to 3 AS or A2 in a year is not applicable to level 2 programmes.

Section 10: Workforce data: teachers of S,T,E,M

82 A further objective of the project was to investigate and report on the data available on the teaching workforce of the FE and Skills sector and whether they can be used to inform the STEM agenda. Specifically:

- Are the S, T, E, and M subjects, disciplines or occupations being taught by individuals with appropriate STEM qualifications?
- Are the S, T, E and M teachers/tutors undertaking appropriate CPD?
- How many S,T, E and M teachers/tutors are there and is this number increasing/decreasing over time?
- Are these teachers/tutors gaining any industry/business experience?

83 There are two main sources of national data on the FE and Skills workforce. The first is the Staff Individualised Return (SIR) managed by Life Long Learning UK (LLUK). This is an annual collection mainly from colleges and contains a wealth of data. However, data on the qualifications that staff teach and the subject matter of the qualifications that staff hold, are currently only recorded at the level of 'Area of Learning': a classification of equivalent breadth as Tier 1 Sector Subject Areas (see Table 10.1).

84 The second source of data is held by the Institute for Learning (IfL) to support the registration and management of staff accreditation and teaching qualifications. The IfL data are extensive and contain substantial detail on the individual's qualifications and areas of teaching. However, entries are completed by the individual and in the areas of interest to this project the individual is not obligated to provide their data. Registration with IfL is voluntary, however anyone teaching in FE and Skills sector has to have an accredited teaching qualification, and registration with IfL facilitates that accreditation. Recently IfL have run major campaigns to increase the level of registration and the quality of data being supplied.

85 One further difference between the two sets of the data is the SIR is held at the level of the employment contract between the provider and each member of its workforce, while the IfL data are held at the level of the individual. It is possible for the individual to have more than contract with more than one provider. However, in reality the number of individuals with multiple contracts is low, estimated to be below 5%.

86 It was recognised early in the project that it would be difficult to answer the fourth question on industrial experience using existing data sources. The investigation of the two sources of data that has now taken place indicates that it will be difficult to answer any of the questions without substantial further input from the STEM community.

87 Feedback gathered during the project suggested that information on teachers' subject or discipline qualification may be of limited value:

- That the diversity of staff in the sector reflects the diversity of the provision required for this sector, thus making the development of a

- classification of relevant subject qualifications a challenge.
- That subject or discipline qualifications are not sufficient assurance that a teacher is capable in teaching, therefore interpreting the results of applying a classification framework would be problematic.
- There was also feedback from employer-representative bodies that accrediting their staff against any form of framework is not seen as adding value.

Given these concerns, the tables in this section should be interpreted with some caution.

88 The first set of tables (Table 10.1, Tables 10.2 to 10.2.2) use SIR data to address the question of the numbers of FE college staff that are teaching STEM related subjects and disciplines and the extent to which they possess qualifications in the relevant S, T, E or M area. However, owing to the limitations described above this analysis is at a very high level. The limited further detail that is available, for example the QCF level of the 'highest subject qualification' teaching staff hold is available in the electronic presentation.

89 Tables 10.3, 10.3.1 and 10.3.2 provide information on the teaching qualifications held by staff teaching in STEM areas. Besides providing additional context, these data do help to inform the data on staff subject and discipline qualifications. For example, noting the common observation that lecturers in Engineering-related subjects are often vocationally qualified themselves, it is probably no coincidence that for 33% of staff teaching 'Engineering, Technology, Manufacturing' the teaching qualification held is Certificate of Education, while 44% of those teaching 'Science/Mathematics' have a PGCE, which tends to parallel the level of the subject qualification for these two groups.

90 However, given the breadth of the classifications the SIR has limited utility in answering the question of "Are the S, T, E and M subjects and disciplines being taught by individuals with appropriate STEM qualifications?" The final table, Table 10.4, illustrates a potential way forward using the IfL data. The table contains example data drawn from the IfL data on the qualifications of teachers who report that they teach motor vehicle studies and/or vehicle maintenance and repair (as an individual can have more than one subject qualification). Equivalent data are available for all of the other S,T, E and M areas. In the table, over a third of teachers report having a qualification in vehicle maintenance and repair and/or automotive engineering.

91 The table also illustrates the challenge of using the IfL data. Over a third of those reporting that that they teach vehicle maintenance and repair related courses do not provide any information on the subject of their non-teaching qualification. The data on the level of the subject/discipline qualification are problematic, with equivalent qualifications often being classified at different QCF levels. However, the greatest challenge in using the data is the classification of both the reported subjects and disciplines being taught and the non-teaching qualification reported by the teacher or tutor. There are over 6000 different descriptions of the qualifications held by

individuals teaching in STEM areas in the FE and Skills sector in the IfL database, and many of these are variants of the same qualification, for example the qualification IEE wiring Regulations 16th edition has over 30 different descriptions in the IfL data. Nevertheless, with the help of the STEM community it might be possible to develop a robust classification of these qualifications. It would be a task similar in size and effort to that required to develop the classification of STEM qualifications.

92 All the data are from 2008/09, with data on 2007/08 being available in the electronic presentation.

93 Further notes are provided with the tables.

Table 10.1 : The main teaching subjects by Areas of Learning of publically funded staff in FE colleges for 2008/09

Area of learning of main subject taught ³	All contracts	Staff ²	All contracts where primary role is teaching and learning	Staff ² where primary role is teaching and learning	All contracts where primary role is teaching and learning, category of employment group is Lecturer/Tutor/Trainer
Business Administration, Management and Professional	13,277	10,846	11,959	9,720	11,278
Construction	7,566	6,606	6,940	6,046	6,662
Engineering, Technology and Manufacturing	8,440	7,175	7,700	6,543	7,328
English, Languages and Communication	14,195	11,548	13,381	10,935	13,025
Foundation Programmes	14,624	11,559	13,066	10,357	12,050
Hairdressing and Beauty Therapy	6,365	5,468	5,871	5,075	5,652
Health, Social Care and Public Services	14,719	12,014	12,968	10,536	12,039
Hospitality, Sports, Leisure and Travel	10,816	8,971	9,863	8,234	9,489
Humanities	7,666	6,810	7,196	6,425	7,016
ICT	7,967	6,407	7,244	5,809	6,985
Land Based Provision	3,660	2,859	3,156	2,468	2,946
Not a member of staff providing teaching and promoting learning	114,878	104,729	2,902	2,537	1,227
Retailing, Customer Service and Transportation	3,675	2,020	3,481	1,852	3,253
Science and Mathematics	8,806	7,431	8,225	6,951	7,944
Teaching staff lower than NQF level 4	4,009	1,598	3,889	1,495	3,491
Unknown	5,300	4,176	3,975	3,007	3,339
Visual and Performing Arts and Media	17,879	14,277	16,807	13,441	16,315
(blank)	4,468	4,013	2,318	1,980	1,663
Grand Total	268,310	228,507	140,941	113,411	131,702

Areas where there are a majority of S,T, E, or M qualifications

Areas where there is significant proportion of S,T,E,M qualifications

Areas where there are some S, T, E, or M related qualifications

Notes

- Data are from the Staff Individualised Record (SIR) for FE Colleges for 2008/09 collected by LLUK
FE Colleges includes General Further Education Colleges including Tertiary, Sixth Form Colleges,
Special Colleges - Agricultural and Horticultural Colleges and Art and Design Colleges, Specialist Colleges and External Institutions.
- Calculation of staff numbers is based on the first of any contracts of that member of staff
- The qualifications in the list of S, T, E, M identified qualifications come from wide range of the Areas of Learning.
Therefore, the assessment of which Areas of Learning are relevant to S, T, E, M is based on the concentration of S,T,E,M qualifications in that Area of Learning

Table 10.2 For selected STEM related Areas of Learning comparison of main subject taught and staffs' subject qualification for publicly funded staff in FE colleges in England in 2008/09¹

SIR23 Area of learning of highest qualification ³	SIR24 Area of learning of main subject taught ²							Total
	Construction	Engineering, Technology and Manufacturing	ICT	Land Based Provision	Science and Mathematics	Visual and Performing Arts and Media	Other	
Construction	4,378	95	10	16	4	9	172	4,684
Engineering, Technology and Manufacturing	186	4,738	130	17	102	48	431	5,652
ICT	27	55	3,576	1	40	44	462	4,205
Land Based Provision	13	13	10	1,784	15	9	127	1,971
Science and Mathematics	47	98	363	130	5,866	86	1,395	7,985
Visual and Performing Arts and Media	16	34	73	23	15	10,473	1,110	11,744
Other	1,995	2,295	2,823	975	1,902	5,646	79,825	95,461
Total	6,662	7,328	6,985	2,946	7,944	16,315	83,522	131,702

Table 10.2.1 : For selected S,T,E, M related Areas of Learning, a breakdown of the subject areas of staffs' highest non teaching qualification by area taught.²

SIR23 Area of Learning of highest qualification ⁴	Area of Learning of main subject taught ³							Total
	Construction	Engineering, Technology and Manufacturing	ICT	Land Based Provision	Science and Mathematics	Visual and Performing Arts and Media	Other	
Construction	66%	1%	0%	1%	0%	0%	0%	4%
Engineering, Technology and Manufacturing	3%	65%	2%	1%	1%	0%	1%	4%
ICT	0%	1%	51%	0%	1%	0%	1%	3%
Land Based Provision	0%	0%	0%	61%	0%	0%	0%	1%
Science and Mathematics	1%	1%	5%	4%	74%	1%	2%	6%
Visual and Performing Arts and Media	0%	0%	1%	1%	0%	64%	1%	9%
Other	30%	31%	40%	33%	24%	35%	96%	72%
Total⁵	100%	100%	100%	100%	100%	100%	100%	100%

Table 10.2.2 : For S,T,E,M related Areas of Learning, a breakdown of the areas staff teach given the Area of Learning of their highest non teaching qualification²

SIR23 Area of learning of highest qualification	SIR24 Area of learning of main subject taught							Total ⁶
	Construction	Engineering, Technology and Manufacturing	ICT	Land Based Provision	Science and Mathematics	Visual and Performing Arts and Media	Other	
Construction	93%	2%	0%	0%	0%	0%	4%	100%
Engineering, Technology and Manufacturing	3%	84%	2%	0%	2%	1%	8%	100%
ICT	1%	1%	85%	0%	1%	1%	11%	100%
Land Based Provision	1%	1%	1%	91%	1%	0%	6%	100%
Science and Mathematics	1%	1%	5%	2%	73%	1%	17%	100%
Visual and Performing Arts and Media	0%	0%	1%	0%	0%	89%	9%	100%
Other	2%	2%	3%	1%	2%	6%	84%	100%
Total	5%	6%	5%	2%	6%	12%	63%	100%

Notes on Tables 11.2 to 11.2.2

- Data from the Staff Individualised Record (SIR) for FE Colleges for 2008/09 collected by LLUK
FE Colleges includes General Further Education Colleges including Tertiary, Sixth Form Colleges,
Special Colleges - Agricultural and Horticultural Colleges and Art and Design Colleges, Specialist Colleges and External Institutions.
- Only data on those contracts where the SIR primary role is teaching and learning and the SIR category of employment group is Lecturer/Tutor/Trainer
- Area of Learning have been selected based on the concentration of S,T,E,M qualification in that area
'Area of Learning of main subject taught' uses field SIR24
- 'Area of Learning' of highest non teaching qualification of staff uses field SIR23
- Table describes the subject area of staff' highest non teaching qualification for a taught Area of learning: "Who is teaching in S,T,E,M related Areas of Learning?"
- Table describes in which areas staff with their highest non teaching qualification in a S,T,E,M related area tend to teach.

Table 10.3 : The Teaching qualifications of staff teaching in selected S, T, E, M areas of learning, for publicly funded staff in FE Colleges in England in 2008/09

Teaching qualification ⁴	Area of Learning of main subject taught ³							Total
	Construction	Engineering, Technology and Manufacturing	ICT	Land Based Provision	Science and Mathematics	Visual and Performing Arts and Media	Other	
BEEd/BA/BSc with concurrent qualified teacher status	162	299	428	90	1064	1080	6053	9156
Certificate of Education	2168	2421	2137	741	1209	2410	19438	30524
CTLLS	31	29	14	18	8	53	223	376
DTLLS	66	57	22	18	23	59	422	667
Learning and Development Awards (inc. predecessor TDLB awards)	404	395	158	144	67	185	2808	4161
Level 3 Teaching Qualification (e.g. CG 7303)	529	647	656	222	407	1261	6926	10648
Level 4 FE Teaching Qualification - Stage 1	196	228	212	116	90	479	2024	3345
Level 4 FE Teaching Qualification - Stage 2	127	101	132	62	62	220	1166	1870
Level 4 FE Teaching Qualification - Stage 3	69	60	84	21	50	136	883	1303
No further qualification on the above list	311	335	160	182	136	646	2557	4327
Non-SVUK Endorsed	251	311	276	181	283	1016	3861	5879
Not applicable (non-teaching staff)	20	16	7	4	23	41	329	440
PGCE	313	632	1422	299	3474	4049	17399	27588
PTLLS	287	190	167	148	54	335	1645	2826
Teaching support qualification at NQF level 3	120	89	38	37	25	101	607	1017
Teaching support with professional qualification at NQF level 4 or above	52	71	56	32	105	201	821	1338
Unknown	1457	1335	935	622	807	3837	15639	24632
(blank)	99	112	81	9	57	226	1021	1605
Total	6662	7328	6985	2946	7944	16315	83522	131702

Table 10.3.1 : For a given S,T,E,M related Area of Learning being taught, the % staff with a specific teaching qualification⁵

Teaching qualification ⁴	Area of Learning of main subject taught ³							Total
	Construction	Engineering, Technology and Manufacturing	ICT	Land Based Provision	Science and Mathematics	Visual and Performing Arts and Media	Other	
BEEd/BA/BSc with concurrent qualified teacher status	2%	4%	6%	3%	3%	6%	7%	7%
Certificate of Education	33%	33%	31%	25%	15%	15%	23%	23%
CTLLS	0%	0%	0%	1%	0%	0%	0%	0%
DTLLS	1%	1%	0%	1%	0%	0%	1%	1%
Learning and Development Awards (inc. predecessor TDLB awards)	6%	5%	2%	5%	1%	1%	3%	3%
Level 3 Teaching Qualification (e.g. CG 7303)	8%	9%	9%	8%	5%	8%	8%	8%
Level 4 FE Teaching Qualification - Stage 1	3%	3%	3%	4%	1%	3%	2%	3%
Level 4 FE Teaching Qualification - Stage 2	2%	1%	2%	2%	1%	1%	1%	1%
Level 4 FE Teaching Qualification - Stage 3	1%	1%	1%	1%	1%	1%	1%	1%
No further qualification on the above list	5%	5%	2%	6%	2%	4%	3%	3%
Non-SVUK Endorsed	4%	4%	4%	6%	4%	6%	4%	4%
Not applicable (non-teaching staff)	0%	0%	0%	0%	0%	0%	0%	0%
PGCE	5%	9%	20%	10%	44%	25%	21%	21%
PTLLS	4%	3%	2%	5%	1%	2%	2%	2%
Teaching support qualification at NQF level 3	2%	1%	1%	1%	0%	1%	1%	1%
Teaching support with professional qualification at NQF level 4 or above	1%	1%	1%	1%	1%	1%	1%	1%
Unknown	22%	18%	13%	21%	10%	24%	19%	19%
(blank)	1%	2%	1%	0%	1%	1%	1%	1%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Table 10.3.2 : The S,T,E,M related Area of Learning staff with a specific Teaching qualification they teach in⁶

Teaching qualification ⁴	Area of Learning of main subject taught ³							Total
	Construction	Engineering, Technology and Manufacturing	ICT	Land Based Provision	Science and Mathematics	Visual and Performing Arts and Media	Other	
BEEd/BA/BSc with concurrent qualified teacher status	2%	3%	5%	1%	12%	12%	66%	100%
Certificate of Education	7%	8%	7%	2%	4%	8%	64%	100%
CTLLS	8%	8%	4%	5%	2%	14%	59%	100%
DTLLS	10%	9%	3%	3%	3%	9%	63%	100%
Learning and Development Awards (inc. predecessor TDLB awards)	10%	9%	4%	3%	2%	4%	67%	100%
Level 3 Teaching Qualification (e.g. CG 7303)	5%	6%	6%	2%	4%	12%	65%	100%
Level 4 FE Teaching Qualification - Stage 1	6%	7%	6%	3%	3%	14%	61%	100%
Level 4 FE Teaching Qualification - Stage 2	7%	5%	7%	3%	3%	12%	62%	100%
Level 4 FE Teaching Qualification - Stage 3	5%	5%	6%	2%	4%	10%	68%	100%
No further qualification on the above list	7%	8%	4%	4%	3%	15%	59%	100%
Non-SVUK Endorsed	4%	5%	5%	3%	5%	17%	61%	100%
Not applicable (non-teaching staff)	5%	4%	2%	1%	5%	9%	75%	100%
PGCE	1%	2%	5%	1%	13%	15%	63%	100%
PTLLS	10%	7%	6%	5%	2%	12%	58%	100%
Teaching support qualification at NQF level 3	12%	9%	4%	4%	2%	10%	60%	100%
Teaching support with professional qualification at NQF level 4 or above	4%	5%	4%	2%	8%	15%	61%	100%
Unknown	6%	5%	4%	3%	3%	16%	63%	100%
(blank)	6%	7%	5%	1%	4%	14%	64%	100%
Total	5%	6%	5%	2%	6%	12%	63%	100%

Notes on Tables 11.3 to 11.3.2

- Data from the Staff Individualised Record (SIR) for FE Colleges for 2008/09 collected by LLLUK
FE Colleges includes General Further Education Colleges including Tertiary, Sixth Form Colleges, Special Colleges - Agricultural and Horticultural Colleges and Art and Design Colleges, Specialist Colleges and External Institutions.
- Only data on those contracts where the SIR primary role is teaching and learning and the SIR category of employment group is Lecturer/Tutor/Trainer
- Area of Learning have been selected based on the concentration of S,T,E,M qualification in that area
'Area of Learning of main subject taught' uses field SIR24
- Teaching qualification uses the field SIR07 Teaching and FE qualification 1
- Table describes the concentration of teaching qualifications for that Area of Learning: "What type of staff teach subjects in this Area of Learning?"
- Table describes in which Areas of Learning staff with different types of teaching qualification tend to teach in.

Table 10.4: Example of the detail on workforce qualifications available in the IfL data¹:
Principal subject areas of non teaching qualifications of staff teaching Vehicle Maintenance and Repair²

Provisional classification of subject of staffs' main non teaching qualification ⁵	Number of teachers/lecturers/ tutors ³							Grand Total
	IfL Teaching Subject classification ⁴							
	Auto electricians	Car maintenance	Motor mech. & auto eng.	Motor vehicle studies	Vehicle & spray painters	Vehicle body building & rep.		
Vehicle maintenance & repair	3	92	278	363	1	4	741	
Automotive Engineering		19	81	98		1	199	
Vehicle body repair		5	7	31	12	20	75	
Transport operations		13	26	53			92	
Aeronautical Engineering				1			1	
Engineering		3	26	34		2	65	
Manufacturing tech/production engineering		3	6	13			22	
Mechanical Engineering			6	3			9	
Mechanical & Electrical Engineering		1	1	1			3	
Welding & Fabrication			2	4			6	
Agricultural Engineering			1	1			2	
Electronic & Electrical Engineering				2			2	
Electronic Engineering			1				1	
Electrical		1	3				4	
Electronics			1				1	
CAD/ 3D design				2			2	
Design and Technology				1			1	
HVAC		2	11	3			16	
Built Environment/construction			2	4		2	8	
Inspection & Testing			1	4			5	
Quality Assurance			1	1			2	
Health & Safety			9	5			14	
Mathematics			1	1			2	
Physics				1			1	
Biological sciences				1			1	
Environment and related sciences			1				1	
ICT		1	13	10			24	
Adult Literacy		3	3	6			12	
Adult Numeracy		5	8	6			19	
Assessor		10	30	38			78	
Education	1	5	29	50	1	2	88	
Business			2	6			8	
Management	1	5	27	29		1	63	
Psychology				3			3	
Food Hygiene & Safety			1				1	
Health care/Social care			6				6	
Hospitality/Leisure				2			2	
Arts/Literature/Languages			4	4			8	
Beauty & Complementary Therapies			1				1	
subject not stated	3	28	121	154	11	2	319	
no qualification given	2	38	77	133		7	257	
no data available		38	174	325	12	14	563	
Grand Total	10	272	961	1393	37	55	2728	

Notes

- Data were provided by the IfL from their registration database. A number of the relevant fields are free text entry or have been codified from free text entry. The data covers all individuals who have registered as teaching the FE and Skills sector since 2007/08. It includes staff at independent providers as well as FE colleges.
- A STEM 'lookup' table has been developed to classify the taught subjects as grouped by IfL. The example gives all the IfL teaching subjects associated with vehicle maintenance and repair in the S,T, E, M Engineering classification.
- The IfL data base is based on individuals not contracts, however, it is possible for one individual to teach more than subject. The count is of the number of teachers who have registered themselves as teaching that subject.
- The IfL classification of taught subjects related to vehicle maintenance and repair.
- The IfL data base contains over 6000 separate entries on the subject qualification held by the registered individuals. Limited classifications of these subject qualifications exist, but they are not sufficient to describe the level of the qualification or the extent it covers a S,T,E,M subject area. A provisional classification of the subject area of the individuals' non teaching qualifications was developed. However, to robustly classify the type of qualification, the QCF/NVQ level of the qualification and the extent it is S,T, E, or M related will require significant input from the STEM community.

Section 11: Electronic Presentation of the FE STEM data set

94 As a paper format severely limits the amount and level of data that can be presented, an electronic presentation of the data has been developed.

95 The electronic presentation is straightforward to use as it contains a mixture of fixed tables, reflecting those in this report, and for those who wish to investigate the data further, a range of pivot tables. The pivot tables will allow the user to examine a range of dimensions of the data and then select specific data using a range of filters.

96 For example, the electronic presentation allows authorised users to drill down to a geographic analysis of the FE & Skills sector's contribution to Science, Technology, Engineering and Mathematics education and training. The user would then be able to examine Science, Technology, Engineering or Mathematics qualifications in that geographical area, by learner gender, ethnicity, age, etc. If required the user will be able to examine a particular qualification, notwithstanding that qualifications with less than 10 instances will be reported as a '<10'. Table 11.1 summarises the different dimensions and filters that will be available in the electronic format and against those used for the tables in this report.

97 The data in the electronic presentation can be updated with changes in the underlying FE and Skills data, and therefore the figures given in the electronic presentation will not necessarily correspond with those given in the snapshot of the data as presented in this report.

98 A high level commentary will be available informing the reader of any major changes to the electronic presentation as the underlying FE and Skills data are updated.

99 The electronic presentation conforms to the policies and procedures for reporting national statistics, for example data of fewer than 10 instances will be reported as "<10".

Table 11.1 Summary of the Dimensions/Filters in the FE STEM Data Set

no.	Dimension	description	output
1	year	academic year of data	report/ electronic
2	learner age	age band of learner	report/ electronic
3	learner gender	gender of learner	report/ electronic
4	learner ethnicity	ethnicity of learner	electronic only
5	provider type	type of provider	report/ electronic
6	provision type	type of provision (ILR filed A10)	electronic only
7	Framework	Aim taken as part of framework or programme	electronic only
8	grade	qualification attainment grade as specified in ILR	electronic only
9	Region	national regions in England using SFA regions	electronic only
10	Sub regions	DfE sub regional grouping	electronic only
11	LA	Local Authority name	electronic only
12	Learning Aim ref no	Reference number of learning aim (ILR field A09)	electronic only
13	LAD Qualification title	Title of qualifications as specified in LAD/ ILR	electronic only
14	LAD Award Body	Awarding body code from the LAD	electronic only
15	QCF/NVQ level		report/ electronic
16	Sector Subject Area tier 2	Sector Subject Area tier 2 code	electronic only
16	STEM classification	S,T,E, or M Area	report/ electronic
18	Qual Title	grouped qualification title	report/ electronic
19	Qual Title index	index number for qualification title	electronic only
20	LAD Qual type desc	LAD qualification type	
21	Qual group code	identifies the type of qualifications based on LAD description	electronic only
22	Qual Type new	identifies type of qualification based on NDAQ type	electronic only
23	General quals	generic title of general qualifications	report/ electronic
24	General Qual index	index for generic title of general qualifications	electronic only
25	NDAQ Purpose code	Purpose code for qualification as specified in NDAQ	electronic only
no.	Outputs	description	output
1	Enrols	qualifications being taken within given year	report/ electronic
2	Completes	qualifications achieved within given year	report/ electronic
3	Achieves	qualifications completed within given year	report/ electronic
4	Withdrawl/Transfers	qualifications where learner has withdrawn or transferred	report/ electronic
5	Continues	qualifications where learner is continuing with studies	report/ electronic
6	N of learner quals (level3)	Number of S,T,E, M level 3 qualifications the learner is enrolled on	report/ electronic
7	STEM Full level 3	size of learner's STEM aims are equivalent to 2 or more AS levels	report/ electronic
8	Size of STEM learning (level 3)	size of learners programme in S, T, E or M at level 3	report/ electronic
9	N of learner quals (level2)	Number of S,T,E or M level 2 qualifications the learner is enrolled on	report/ electronic
10	STEM Full level 2	size of learner's STEM aims are equivalent to 5 or more GCSEs	report/ electronic
11	Size of STEM learning (level 3)	size of learners programme in S, T, E or M at level 2	report/ electronic

ANNEX A: Steering Group Members

John Landeryou	BIS	Chair
Matthew Harrison	The Royal Academy of Engineering	(Project lead)
Ruth Wright	Engineering Council	
Nick Bowes	ACME	
Daniel Sandford Smith	Gatsby Charitable Foundation	
David Ozholl	Technician Council	
Rhys Morgan	E4E (Education for Engineering)	
Adrian Jones	BIS	
Anil Kumar	Engineering UK	
Audrey Brown	DfE	
David Montagu	Royal Society	
Graham Keyse	IFL	
Ian Harvey	SCORE	
Ros Mist	SCORE	
Jane Imrie	NCETM	
Janet Presland	BIS	
Jean Kelly	IFL	
Jim Bennett	BIS	
Jonathan Yewdall	BIS	
Lucy Pollard	IFL	
Mark Spilsbury	UKCES	
Peter Glover	UKCES	
Rachel Forsyth	Society of Biology	
Stephen Axford	BIS	
Victoria Barker	LSIS	
Andy Frost	Blue Alumni	
Clive Greatorex	Blue Alumni	
David Mason	Blue Alumni	

ANNEX B: Number of STEM related qualifications by Type of Qualification.

The STEM list of identified qualifications is contained in the electronic presentation. Summaries of the number of different qualifications that have been classified as supporting education and training in Science, Technology, Engineering or Mathematics and are taken in the FE and Skills sector in England have been described in Section 2.

This annex provides further detail by reporting the number of different qualifications by qualification type and QCF/NVQ level. This breakdown demonstrates the variety of qualifications and thus learning opportunities the FE and Skills sector provides and an indication of some of the complexities in reporting this contribution.

Table A2.1: Number of different Entry qualifications in STEM list of qualifications by qualification type

QCF/NVQ level	Qualification type description (modified version from the LAD)	N of different qualifications
E	City & Guilds numbered qualification (sector specific)	1
E	Entry Level Certificate	1
E	Functional Skills	23
E	Numbers Direct	40
E	Other (qualification with no specific type)	10
E	Other Award	1
E	Other Certificate	50
E	Other Maths and Numeracy	50
E	QCF Award	9
E	QCF Certificate	10
E	QCF Diploma	5
E	QCF Units	14
E	Unitisation Provision	17
E	Other Units	6
E	Non-externally-certificated learning aim	10

Table A2.2: Number of different QCF/NVQ level 1 qualifications in STEM list of qualifications by qualification type

QCF/NVQ level	Qualification type description (modified version from the LAD)	N of different qualifications
1	Diploma (14-19)	17
1	Diploma (14-19) Template/Catalogue aim	3
1	Principal Learning within Diploma (14-19)	16
1	Free Standing Mathematics Qualifications	6
1	National Award	4
1	National Certificate	2
1	National First Award	1
1	NVQ	83
1	Occupational Qualification (QCF)	3
1	City & Guilds numbered qualification (sector specific)	12
1	Other (qualification with no specific type)	102
1	Other Award	18
1	Other Certificate	73
1	Other Diploma	18
1	Other Maths and Numeracy	42
1	Progression Award	2
1	QCF Award	40
1	QCF Certificate	26
1	QCF Diploma	17
1	Functional Skills	25
1	Numbers Direct	5
1	QCF Units	47
1	NVQ/GNVQ Key Skills Unit	31
1	Unitisation Provision	30
1	NVQ/GNVQ additional units	3
1	Other Units	8
1	GNVQ (expired)	12
1	Non-externally-certificated learning aim	11

Table A2.3: Number of different qualifications with no level assigned in STEM list of qualifications by qualification type

QCF/NVQ level	Qualification type description (modified version from the LAD)	N of different qualifications
X	City & Guilds numbered qualification (sector specific)	1
X	Non Council funded studies	13
X	Non-externally-certificated learning aim	12
X	Numbers Direct	1
X	Other (qualification with no specific type)	187
X	Other Certificate	6
X	Other Diploma	1
X	Other Maths and Numeracy	8
X	Other unlisted qualification	7
X	Professional Development Qualification	7
X	QCF Units	1

Table A2.3: Number of different QCF/NVQ level 2 qualifications in STEM list of qualifications by qualification type

QCF/NVQ level	Qualification type description (modified version from the LAD)	N of different qualifications
2	Diploma (14-19)	16
2	Diploma (14-19) Template/Catalogue aim	5
2	Principal Learning within Diploma (14-19)	16
2	Edexcel First Diploma	26
2	First Certificate	16
2	First Diploma	4
2	Free Standing Mathematics Qualifications	7
2	Functional Skills	22
2	GCSE	198
2	Short Course GCSE	17
2	National Award	2
2	National Certificate	14
2	National First Award	1
2	Numbers Direct	4
2	NVQ	365
2	City & Guilds numbered qualification (sector specific)	13
2	Occupational Qual	7
2	Other (qualification with no specific type)	136
2	Other Award	52
2	Other Certificate	192
2	Other Diploma	39
2	Other Maths and Numeracy	43
2	Progression Award	20
2	QCF Award	96
2	QCF Certificate	103
2	QCF Diploma	82
2	NVQ/GNVQ Key Skills Unit	33
2	QCF Units	40
2	NVQ/GNVQ additional units	12
2	Unitisation Provision	28
2	Other Units	9
2	Conversion Class Code for BTECs	5
2	GNVQ (expired)	22
2	Other unlisted qualification	5
2	Non-externally-certificated learning aim	9

Table A2.4: Number of different QCF/NVQ level 3 qualifications in STEM list of qualifications by qualification type

QCF/NVQ level	Qualification type description (modified version from the LAD)	N of different qualifications
3	Access Certificate	28
3	Access to HE Diploma	170
3	Advanced Extension Award	6
3	Advanced National Certificate	4
3	Advanced VCE	22
3	Advanced VCE (Double Award)	17
3	Baccalaureate	4
3	Diploma (14-19)	33
3	Diploma (14-19) Template/Catalogue aim	4
3	Principal Learning within Diploma (14-19)	17
3	Edexcel National Award	45
3	Edexcel National Certificate	68
3	Edexcel National Diploma	67
3	Free Standing Mathematics Qualifications	13
3	GCE A level	243
3	GCE A Level (Double Award)	11
3	GCE AS level	160
3	GCE AS level (Double Award)	5
3	National Certificate	8
3	National Diploma	18
3	NVQ	339
3	City & Guilds numbered qualification (sector specific)	4
3	Occupational Qual	7
3	Other (qualification with no specific type)	98
3	Other Award	113
3	Other Certificate	227
3	Other Diploma	173
3	Other Maths and Numeracy	7
3	Pre-U Certificate	8
3	Progression Award	9
3	QCF Award	69
3	QCF Certificate	92
3	QCF Diploma	152
3	STEP	3
3	Conversion Class Code for BTECs	23
3	QCF Units	33
3	NVQ/GNVQ Key Skills Unit	22
3	Unitisation Provision	24
3	NVQ/GNVQ additional units	7
3	Other Units	4
3	Non-externally-certificated learning aim	10
3	Other unlisted qualification	3

Table A2.5: Number of different qualifications QCF/NVQ level 4 and above in STEM list of qualifications by qualification type

QCF/NVQ level	Qualification type description (modified version from the LAD)	N of different qualifications
4	Diploma of Higher Education (DipHE)	3
4	Higher Certificate	3
4	National Award	1
4	NVQ	72
4	City & Guilds numbered qualification (sector specific)	1
4	Other (qualification with no specific type)	36
4	Other Award	5
4	Other Certificate	10
4	Other Diploma	21
4	Other Maths and Numeracy	4
4	Professional Diploma	4
4	QCF Award	9
4	QCF Certificate	5
4	QCF Diploma	12
5	HND	100
5	NVQ	6
5	Other Certificate	2
5	Other Diploma	12
5	Postgraduate Diploma	2
5	Professional Diploma	10
5	QCF Diploma	6
6	BA	22
6	BEng	12
6	BSc	59
6	University Certificate	2
7	MSc	3
4	NVQ/GNVQ Key Skills Unit	4
4	Unitisation Provision	16
4	Other Units	2
4	NVQ/GNVQ additional units	1