



Qualifications and  
Curriculum Authority

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# Evaluation of participation in GCE mathematics

*Appendix E: Online questionnaire 2005–2007*

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QCA Research Faculty

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## Analysis of QCA participation in GCE mathematics questionnaire longitudinal data 2005 to 2007

Where data is reported as 'all centres' it has been weighted to the proportions given in the table below, which mirror the national centre type proportions, and are used for the annual UCAS/QCA survey of Curriculum 2000 provision.

Centre type	%
Further education	10.7
Independent	20.1
Sixth-form college	4.9
State secondary	64.3
Total	100.0

Where data are reported by centre type, they are unweighted and in the proportions in which they were received.

### 2005 to 2007 – Analysis of QCA participation in GCE mathematics questionnaire

#### Weighted frequencies

	2005		2006		2007	
Centre type	Frequency	%	Frequency	%	Frequency	%
Further education	20	10.7	20	10.7	20	10.7
Independent	38	20.1	38	20.1	38	20.1
Sixthform college	9	4.9	9	4.9	9	4.9
State secondary	122	64.3	121	64.3	123	64.3
Total	190	100.0	188	100.0	191	100.0

#### Unweighted frequencies:

	2005		2006		2007	
Centre type	Frequency	%	Frequency	%	Frequency	%
Further education	31	16.3	18	9.6	10	5.2

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Independent	43	22.6	48	25.5	71	37.2
Sixthform college	21	11.1	17	9.0	11	5.8
State secondary	95	50.0	105	55.9	99	51.8
Total	190	100.0	188	100.0	191	100.0

**Matched data:**

**Frequencies of centres in the matched data:**

Centre type	2005		2006		2007	
	Frequency	%	Frequency	%	Frequency	%
Further education	2	6.1	4	6.9	10	5.2
Independent	10	30.3	17	29.3	71	37.2
Sixth-form college	3	9.1	5	8.6	11	5.8
State secondary	18	54.5	32	55.2	99	51.8
Total	33	100.0	58	100.0	191	100.0

**Frequencies of only centres that had been matched across years:**

Centre type	2005		2006		2007	
	Frequency	%	Frequency	%	Frequency	%
Further education	2	6.1	2	6.1	2	6.1
Independent	10	30.3	10	30.3	10	30.3
Sixth-form college	3	9.1	3	9.1	3	9.1
State secondary	18	54.5	18	54.5	18	54.5
Total	33	100.0	33	100.0	33	100.0

**Weighted frequencies of matched data:**

Centre type	2005		2006		2007	
	Frequency	%	Frequency	%	Frequency	%
Further education	20	10.7	20	10.7	20	10.7
Independent	38	20.1	38	20.1	38	20.1
Sixth-form college	9	4.9	9	4.9	9	4.9
State secondary	122	64.3	122	64.3	122	64.3
Total	190	100.0	190	100.0	190	100.0

NB. The following results for 'all centres' uses the original weighted frequencies, as in the first table on this page.

## Section A: About your centre and you

### QA5. Role of person completing questionnaire

Role	2005		2006		2007	
	Frequency	%	Frequency	%	Frequency	%
Assistant headteacher	0	0.0	2	3.5	9	4.8
Head of maths/ other leadership roles	33	100.0	50	87.7	134	71.7
Maths teacher/lecturer	0	0.0	3	5.3	32	17.1
Maths second in charge	0	0.0	2	3.5	6	3.2
Other	0	0.0	0	0.0	6	3.2
<b>Total</b>	33	100.0	57	100.0	187	100.0
Missing	158		134		4	

Throughout the survey period we have had a very high proportion of senior subject managers responding – ranging between 75 and 85%.

### QA6. Your GCE A level mathematics awarding body

Awarding body	2006		2007	
	Frequency	%	Frequency	%
AQA	8	4.2	26	13.6
Edexcel	33	17.3	110	57.6
OCR (including MEI)	7	3.7	24	12.6
OCR (not MEI)	10	5.2	30	15.7
Missing	133	69.6	1	0.5
<b>Total</b>	191	100.0	191	100.0

NB. Not asked in 2005.

#### Frequencies of only centres that had been matched across years:

Awarding body	2006		2007	
	Frequency	%	Frequency	%
AQA	6	18.2	7	21.2
Edexcel	16	48.5	16	48.5
OCR (including MEI)	5	15.2	4	12.1
OCR (not MEI)	6	18.2	6	18.2
Missing	0	0.0	0	0.0
<b>Total</b>	33	100.0	33	100.0

NB. Not asked in 2005.

Response rates over-represented Edexcel both years when the question was asked.

## Section B: Participation and retention

### QB1a. Number of AS students at beginning of September 2006

Excluding centres indicating 0

	No.	Minimum	Maximum	Sum	Mean	Std. Deviation
<b>All centres</b>						
-2005	34	7	218	1,484	43.29	36.67
-2006	57	2	379	2,568	45.30	49.49
-2007	161	4	462	7,664	47.57	47.90
<b>Further education</b>						
-2005	2	38	54	92	46.00	11.31
-2006	4	6	82	168	42.00	31.11
-2007	6	30	120	404	67.33	38.32
<b>Independent</b>						
-2005	10	7	99	360	36.00	27.70
-2006	17	4	107	621	36.53	29.16
-2007	63	5	115	2,443	38.78	24.88
<b>Sixth-form college</b>						
-2005	3	120	218	493	164.33	49.66
-2006	5	30	379	928	185.60	127.39
-2007	8	60	462	1,586	198.25	126.66
<b>State secondary</b>						
-2005	18	12	107	697	38.72	27.04
-2006	32	2	129	1,209	37.78	29.94
-2007	87	4	130	3,358	38.60	24.74

There has been a year-on-year increase in mean AS students – from 43.29 in September 2004 (2005) survey, to 45.3 in the 2005 survey and 47.6 in the 2007 survey. These cases are not matched and variation in respondent centre size could account for some of this change.

Frequencies of only centres that had been matched across years:

	No.	Minimum	Maximum	Sum	Mean	Std. Deviation
<b>All centres</b>						
-2005	34	7	218	1,484	43.29	36.67
-2006	32	4	212	1,493	46.00	40.53

	-2007	32	13	276	1767	55.54	53.39
<b>Further education</b>							
	-2005	2	38	54	92	46.00	11.31
	-2006	2	40	40	80	40.00	0.00
	-2007	1	45	45	45	45.00	-
<b>Independent</b>							
	-2005	10	7	99	360	36.00	27.70
	-2006	10	4	107	396	39.60	32.11
	-2007	9	13	115	355	39.44	34.48
<b>Sixth-form college</b>							
	-2005	3	120	218	493	164.33	49.66
	-2006	3	137	212	519	173.00	37.59
	-2007	3	170	276	625	208.33	58.77
<b>State secondary</b>							
	-2005	18	12	107	697	38.72	27.05
	-2006	18	11	110	704	39.11	27.89
	-2007	18	15	100	766	42.56	23.77

For the matched sample too this question shows an increase in the mean number of students at the beginning of the year in all instances, except for further education schools. For all centres the mean is 43.29 in the 2005 survey, 46.0 in the 2006 survey compared with 55.54 in the 2007 survey, a greater increase than in the full survey data.

#### QB1b. Number of A2 students at beginning of September 2006

Excludes centres indicating 0

	No.	Minimum	Maximum	Sum	Mean	Std. Deviation
<b>All centres</b>						
	-2005	34	2	129	897	26.17
	-2006	57	2	217	1,623	28.63
	-2007	157	1	308	4,738	30.10
<b>Further education</b>						
	-2005	2	19	29	48	24.00
	-2006	4	12	42	89	22.25
	-2007	6	10	50	179	29.83
<b>Independent</b>						
	-2005	10	2	69	283	28.30
	-2006	17	3	72	418	24.59
	-2007	63	1	85	1,842	29.24
<b>Sixth-form college</b>						
	-2005	3	45	129	269	89.67

-2006	5	64	217	549	109.80	65.36
-2007	8	29	308	1,015	126.88	106.26
<b>State secondary</b>						
-2005	18	6	64	387	21.50	16.20
-2006	32	2	124	784	24.50	22.82
-2007	84	1	118	2,024	24.10	19.96

**Frequencies of only centres that had been matched across years:**

	No.	Minimum	Maximum	Sum	Mean	Std. Deviation
<b>All centres</b>						
-2005	34	2	129	897	26.17	22.33
-2006	32	3	128	891	27.46	3.14
-2007	32	3	249	1,107	34.81	42.07
<b>Further education</b>						
-2005	2	19	29	48	24.00	7.07
-2006	2	14	21	35	17.50	4.95
-2007	1	25	25	25	25.00	-
<b>Independent</b>						
-2005	10	2	69	283	28.30	20.85
-2006	10	3	72	291	29.10	24.68
-2007	9	3	77	259	28.78	24.91
<b>Sixth form college</b>						
-2005	3	45	129	269	89.67	42.25
-2006	3	70	128	268	89.33	33.49
-2007	3	83	249	420	140.00	94.43
<b>State secondary</b>						
-2005	18	6	64	387	21.50	16.20
-2006	18	7	53	415	23.06	15.03
-2007	18	7	65	450	25.00	16.71

For this question the year-on-year data shows an increase in the mean number of students at the beginning of the year in all instances, except for further education, independent and sixth form. For all centres the mean is 26.17 in the 2005 survey, 27.46 in the 2006 survey compared with 34.81 in the 2007 survey.

**QB1c. Number of 'A level in one year' students at beginning of September 2006**

Not asked in 2005

**Frequencies of only centres that had been matched across years:**

	No.	Minimum	Maximum	Sum	Mean	Std. Deviation
<b>All centres</b>						
-2005	-	-	-	-	-	-
-2006	7	1	26	89	11.92	7.92
-2007	6	1	58	110	17.27	19.97
<b>Further education</b>						
-2005	-	-	-	-	-	-
-2006	-	-	-	-	-	-
-2007	-	-	-	-	-	-
<b>Independent</b>						
-2005	-	-	-	-	-	-
-2006	3	1	26	39	13.00	12.53
-2007	4	1	32	47	11.75	14.01
<b>Sixth-form college</b>						
-2005	-	-	-	-	-	-
-2006	3	15	23	56	18.67	4.04
-2007	2	22	58	80	40.00	25.46
<b>State secondary</b>						
-2005	-	-	-	-	-	-
-2006	3	6	10	24	8.00	2.00
-2007	2	3	10	13	6.50	4.95

For this question the year-on-year data shows an increase in the mean number of students at the beginning of the year in overall, but at centre level this is not the case for independent and state secondary. For all centres the mean is 11.92 in the 2006 survey compared with 17.27 in the 2007 survey.

**QB2a. Numbers of AS students dropping between September 2004 and February 2005**

The analysis here expresses the numbers of AS students dropping mathematics between September and February as a percentage of the AS total (QB1a >0 and QB2a >0).

Centres		2005			2006			2007		
		No.	Sum	Mean	No.	Sum	Mean	No.	Sum	Mean
<b>All centres</b>	AS September	34	1484	43.29	32	1493	46.00	32	1767	55.54

	AS Drop	34	132	3.85	32	108	3.33	32	141	4.44
<b>Further education</b>	AS September	2	92	46.00	2	80	40.00	1	45	45.00
	AS Drop	2	26	13.00	2	15	7.50	1	8	8.00
<b>Independent</b>	AS September	10	360	36.00	10	396	39.60	9	355	39.44
	AS Drop	10	11	1.10	10	11	1.10	9	9	1.00
<b>Sixth-form college</b>	AS September	3	493	164.33	3	519	173.00	3	625	208.33
	AS Drop	3	53	17.67	3	46	15.33	3	65	21.67
<b>State secondary</b>	AS September	18	697	38.72	18	704	39.11	18	766	42.56
	AS Drop	18	64	3.56	18	50	2.78	18	52	2.89

This analysis showed in 2007 an average drop out for all centres of 8% (compared with 7% in 2006 and 9% in 2005). The highest percentage drop out was 17.8% in further education (18.8% in 2006, 28.3% in 2005), the lowest was in independent.

**Table of grouping the percentages of students dropping per centre:**

	2006/7 (%)	2005/6 (%)	2004/5 (%)
0%	16.1	25.0	21.9
1-10%	58.1	53.1	43.8
11-25%	22.6	18.8	28.1
26-50%	3.2	3.1	3.1
51-75%	0.0	0.0	0.0
76-99%	0.0	0.0	3.1
100%	0.0	0.0	0.0
Total	100.0	100.0	100.0

This shows around less than a quarter of the 33 centres reporting no drop out at all in 2007 (a lower proportion than in 2005 and 2006). For all three years, more than 90% of centres reported drop out of 25% or less.

### **QB2b. Proportion of A2 students dropping out between September 2004 and February 2005**

The analysis here expresses the numbers of A2 students dropping mathematics between September and February as a percentage of the A2 total (QB1b>0 and QB2b>0).

Centres		2005			2006			2007		
		No.	Sum	Mean	No.	Sum	Mean	No.	Sum	Mean
<b>All centres</b>	A2 September	33	895	26.81	32	868	27.42	29	875	30.58

	A2 Drop	33	43	1.29	32	16	0.49	29	19	0.66
<b>Further education</b>	A2 September	2	48	24.00	2	35	17.50	1	25	25.00
	A2 Drop	2	3	1.50	2	1	0.50	1	0	0.00
<b>Independent</b>	A2 September	9	281	31.22	9	262	29.11	7	250	35.71
	A2 Drop	9	3	0.33	9	3	0.33	7	1	0.14
<b>Sixth-form college</b>	A2 September	3	269	89.67	3	268	89.33	2	171	85.50
	A2 Drop	3	8	2.67	3	1	0.33	2	1	0.50
<b>State secondary</b>	A2 September	18	387	21.50	18	415	23.06	17	438	25.76
	A2 Drop	18	27	1.50	18	10	0.56	17	14	0.82

This analysis showed an average drop for all centres of 2.2% in 2007 (compared with 1.8% in 2006 and 4.8% in 2005). The highest percentage drop is reported in state secondary schools and is 3.2% (compared with 2.4% in 2006 and 7% in 2005). The lowest in further education colleges (0% compared with 2.9% in 2006 and 6.3% in 2005).

**Table of grouping the percentages of students dropping per centre**

	2006/7 (%)	2005/6 (%)	2004/5 (%)
0%	70.4	78.1	64.5
1-10%	22.2	18.8	25.8
11-25%	3.7	3.1	3.2
26-50%	3.7	0.0	3.2
51-75%	0.0	0.0	0.0
76-99%	0.0	0.0	0.0
100%	0.0	0.0	3.2
Total	100.0	100.0	100.0

This shows 70% of the 33 centres reporting no drop out at all in 2006/7 (78% in 2005/6 and 64.5% in 2004/5). For all three years, over 90% of centres reported dropout of 25% or less. Drop-out rates at A2 are much lower than at AS for all three years.

### **QB2c. Proportion of students doing A level in a year who dropped mathematics between September 2006 and February 2007**

The analysis here expresses the numbers of students doing A level in a year who dropped mathematics between September and February as a percentage of the total number of students doing A level in a year (QB1c >0 and QB2c >=0).

Not asked in 2005

Centres		2006			2007		
		No.	Sum	Mean	No.	Sum	Mean
<b>All centres</b>	A level 1 yr Sept	7	88	13.21	5	60	12.05
	A level 1 yr Drop	7	6	0.85	5	2	0.45
<b>Further education</b>	A level 1 yr Sept	-	-	-	-	-	-
	A level 1 yr Drop	-	-	-	-	-	-
<b>Independent</b>	A level 1 yr Sept	2	38	19.00	3	46	15.33
	A level 1 yr Drop	2	1	0.50	3	1	0.33
<b>Sixth-form college</b>	A level 1 yr Sept	3	56	18.67	1	22	22.00
	A level 1 yr Drop	3	9	3.00	1	2	2.00
<b>State secondary</b>	A level 1 yr Sept	3	24	8.00	2	13	6.50
	A level 1 yr Drop	3	0	0.00	2	0	0.00

This analysis showed an average drop-out rate for all centres of 3.3% in 2007 (compared with 6.8% in 2006). The highest percentage drop out is reported in sixth form colleges and is 9.1% (compared with 16.1% in 2006), and the lowest in independent schools (2.2% compared with 2.6% in 2006). As with AS, all centre types showed a decrease in drop-out rates, with the exception of state secondary.

The total number of centres and students involved is much lower than for those using the more usual AS/A2 route. However, the proportions dropping out are generally higher than in the other groups.

### QB3. Proportion dropping GCE AS mathematics between September 2006 and February 2007 compared with 2005–6

All centres	2005		2006		2007	
	Frequency	%	Frequency	%	Frequency	%
Higher than	4	12.9	2	6.1	2	6.5
Lower than	9	29.0	8	24.2	5	16.1
Same as	18	58.1	23	69.7	24	77.4
<b>Total</b>	31	100.0	33	100.0	31	100.0
Missing	2		0		2	

Proportion reporting 'higher than' 2005–6 has risen from 6.1% in 2006 to 6.5% in 2007. Those reporting a rate the same as last year (2005–6) is 77.4% in 2007 compared with 69.7% in 2006. The proportion reporting a lower drop out is 16.1%, compared with 24.2% in 2006. Proportions were higher in 2005.

Centre type		Frequency	2007 (%)	2006 (%)	2005 (%)
<b>Further education</b>	Higher than previous year	1	100.0	0.0	50.0
	Lower than previous year	0	0.0	0.0	0.0
	Same as previous year	0	0.0	100.0	50.0
	<b>Total</b>	<b>1</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Independent</b>	Higher than previous year	0	0.0	0.0	0.0
	Lower than previous year	1	11.1	30.0	22.2
	Same as previous year	8	88.9	70.0	77.8
	<b>Total</b>	<b>9</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Sixth-form college</b>	Higher than previous year	0	0.0	0.0	0.0
	Lower than previous year	2	66.7	33.3	33.3
	Same as previous year	1	33.3	66.7	66.7
	<b>Total</b>	<b>3</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>State secondary</b>	Higher than previous year	1	5.6	11.1	17.7
	Lower than previous year	2	11.1	22.2	35.3
	Same as previous year	15	83.3	66.7	47.1
	<b>Total</b>	<b>18</b>	<b>100</b>	<b>100</b>	<b>100</b>

In all centre types, except further education colleges, there is a larger percentage of centres reporting lower drop-out rates over three years than higher, although in all cases the majority report no change.

**QB3b. Proportion dropping GCE A2 mathematics between September and February compared with the previous year.**

All centres	2005 survey		2006 survey		2007 survey	
	Frequency	%	Frequency	%	Frequency	%
Higher than previous year	3	9.4	1	3.1	3	10.3
Lower than previous year	2	6.3	6	18.8	2	6.9
Same as previous year	27	84.4	25	78.1	24	82.8
<b>Total</b>	<b>32</b>	<b>100.0</b>	<b>32</b>	<b>100.0</b>	<b>29</b>	<b>100.0</b>
Missing	1		1		4	

The proportion reporting 'higher than' the previous year has risen from 3.1% in 2006 to 10.3% in 2007. Those reporting a rate the 'same as the previous year' is 82.8% in 2007, compared with 84.4% in 2005 and 78.1% in 2006. The proportion reporting a lower drop-out rate is 6.9% in 2007, compared with 6.3% in 2005 and 18.8% in 2006.

Centre type		Frequency	– 2007 (%)	– 2006 (%)	– 2005 (%)
<b>Further education</b>	Higher than previous year	0	0.0	0.0	50.0
	Lower than previous year	0	0.0	0.0	0.0
	Same as previous year	1	100.0	100.0	50.0
	<b>Total</b>	<b>1</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Independent</b>	Higher than previous year	0	0.0	11.1	0.0
	Lower than previous year	1	12.5	11.1	50.0
	Same as previous year	7	87.5	77.8	50.0
	<b>Total</b>	<b>8</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Sixth-form college</b>	Higher than previous year	0	0.0	0.0	0.0
	Lower than previous year	1	33.3	33.3	11.1
	Same as previous year	2	66.7	66.7	88.9
	<b>Total</b>	<b>3</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>State secondary</b>	Higher than previous year	3	17.6	0.0	11.1
	Lower than previous year	0	0.0	22.2	5.6
	Same as previous year	14	82.4	77.8	83.3
	<b>Total</b>	<b>17</b>	<b>100</b>	<b>100</b>	<b>100</b>

In centre types, except further education colleges and state secondary schools, there is a larger percentage of centres reporting lower drop-out rates this year than higher, although in all cases the majority report no change.

#### QB4. How many of your students completed AS mathematics last year?

AS completer	No.	Sum	Mean
<b>All centres</b>			
-2005	34	1,134	33.53
-2006	31	1,237	39.53
-2007	26	1,179	46.04
<b>Further education</b>			
-2005	2	79	39.50
-2006	2	58	29.00
-2007	1	30	30.00
<b>Independent</b>			
-2005	10	315	31.50
-2006	10	355	35.50
-2007	9	345	38.33
<b>Sixth-form college</b>			
-2005	2	236	118.00
-2006	3	420	140.00

	-2007	3	471	157.00
<b>State secondary</b>				
	-2005	18	545	30.28
	-2006	17	578	34.00
	-2007	13	427	32.85

**QB5. How many of the students completing AS mathematics last year *did not* move on to A2 mathematics this year?**

Analysis of QB8 and QB9 was carried out to examine the proportion of those completing AS who continued with A2. (QB8 $\geq$ 0 and QB9 $\geq$ 0), QB9 was expressed as a percentage of QB8.

Centres		2005			2006			2007		
		No.	Sum	Mean	No.	Sum	Mean	No.	Sum	Mean
<b>All centres</b>	AS completed	33	1133	34.40	31	1237	39.53	26	1179	46.04
	did not progress to A2	33	352	10.69	31	368	11.74	26	347	13.54
<b>Further education</b>	AS completed	2	79	39.50	2	58	29.00	1	30	30.00
	did not progress to A2	2	31	15.50	2	23	11.50	1	4	4.00
<b>Independent</b>	AS completed	9	314	34.89	10	355	35.50	9	345	38.33
	did not progress to A2	9	72	8.00	10	72	7.20	9	88	9.78
<b>Sixth-form college</b>	AS completed	2	236	118.00	3	420	140.00	3	471	157.00
	did not progress to A2	2	126	63.00	3	146	48.67	3	142	47.33
<b>State secondary</b>	AS completed	18	545	30.28	17	578	34.00	13	427	32.85
	did not progress to A2	18	165	9.17	17	179	10.53	13	137	10.54

**Percentage not progressing to A2**

Centre type	All centres	Further education	Independent	Sixth form college	State secondary
<b>2005</b>	31.1%	39.2%	22.9%	53.4%	30.3%
<b>2006</b>	29.7%	39.7%	20.3%	34.8%	31.0%
<b>2007</b>	29.4%	13.3%	25.5%	30.1%	32.1%

Comparing 2007 with 2006 and 2005 there is a slightly lower percentage of AS-completing students who did not progress to A2 in 2007 – a higher retention rate. In 2005 the retention rate for all centres was around 69%, in 2006 and 2007 the rate was 70%.

All questionnaire responses across years

**2007**

Centre type	All centres	Further education	Independent	Sixth-form college	State secondary
% not progressing to A2	25.7%	36.1%	22.4%	25.5%	25.0%

## 2006

Centre type	All centres	Further education	Independent	Sixth-form college	State secondary
% not progressing to A2	32.4%	38.4%	26.2%	34.4%	30.8%

## 2005

Centre type	All centres	Further education	Independent	Sixth-form college	State secondary
% not progressing to A2	33.4%	43.5%	22.9%	33.3%	33.9%

For all responding centres, not just matched, comparing 2007 with 2006 and 2005 there is a lower percentage of AS completing students who did not progress to A2 in 2007 – a higher retention rate. In 2005 and 2006 the retention rate for all centres was around 67%. In 2007 the rate was 74%

### QB6. Of the students who completed AS mathematics last year, how many of the students do you think intended originally to complete the full A level?

Analysis was carried out using only centres who answered QB8 (>0), QB9 (>=0) and QB10 >=0) to calculate the difference between actual and predicted attrition between AS and A2.

		2005			2006			2007		
Centre type		No.	Sum	Mean	No.	Sum	Mean	No.	Sum	Mean
All centres	AS completer	31	1,000	32.05	28	1,089	39.1	24	1,179	48.39
	AS intended A2	31	298	9.54	28	325	11.67	24	343	14.08
	AS not A2	31	799	24.96	28	841	30.19	24	817	33.54
	<i>Proportion intending to progress =</i>	79.9%			77.2%			69.3%		
	<i>Proportion actually progressing =</i>	70.2%			70.2%			70.9%		
	<i>Difference =</i>	9.7%			7.1%			-1.6%		
State secondary	AS completer	17	496	29.18	14	449	32.07	12	427	35.58
	AS intended A2	17	152	8.94	14	142	10.14	12	134	11.17
	AS not A2	17	375	22.06	14	344	24.57	12	331	27.58

Evaluation of participation in GCE mathematics – Appendix E

<i>Proportion intending to progress =</i>	75.6%			76.6%			77.5%		
<i>Proportion actually progressing =</i>	69.4%			68.4%			68.6%		
<i>Difference =</i>	6.3%			8.2%			8.9%		
<b>Further education college</b>									
AS completer	2	79	39.50	2	58	29.00	1	30	30.00
AS intended A2	2	31	15.50	2	23	11.50	1	4	4.00
AS not A2	2	74	37.00	2	48	24.00	1	30	30.00
<i>Proportion intending to progress =</i>	93.7%			82.8%			100.0%		
<i>Proportion actually progressing =</i>	60.8%			60.3%			86.7%		
<i>Difference =</i>	32.9%			22.4%			13.3%		
<b>Sixth-form college</b>									
AS completer	1	78	78.00	3	420	140.00	3	471	157.00
AS intended A2	1	4	4.00	3	146	48.67	3	142	47.33
AS not A2	1	60	60.00	3	315	105.00	3	240	80.00
<i>Proportion intending to progress =</i>	76.9%			75.0%			51.0%		
<i>Proportion actually progressing =</i>	94.9%			65.2%			69.9%		
<i>Difference =</i>	-17.9%			9.8%			-18.9%		
<b>Independent</b>									
AS completer	9	314	34.89	10	355	35.50	9	345	38.33
AS intended A2	9	72	8	10	72	7.20	9	88	9.78
AS not A2	9	252	28	10	280	28.00	9	260	28.89
<i>Proportion intending to progress =</i>	80.3%			78.9%			75.4%		
<i>Proportion actually progressing =</i>	77.1%			79.7%			74.5%		
<i>Difference =</i>	3.2%			-0.8%			0.9%		

Percentage of AS completers who were predicted to progress to A2 but did not.

Centre Type	All centres	Further education	Independent	Sixth-form college	State secondary
2005	9.7%	32.9%	3.2%	-17.9%	6.3%
2006	7.1%	22.4%	-0.8%	9.8%	8.2%
2007	-1.6%	13.3%	0.9%	-18.9%	8.9%

The figures here indicate an overall reduction in the proportion intending to progress who did not from 9.7% in 2005 to -1.6% in 2007, indicating that by 2007 some students were choosing to progress who teachers did not think had intended to at first.

**All centres 2007**

	No.	Minimum	Maximum	Sum	Mean	Std. Deviation
AS completer	135	1	220	5,218	38.70	34.30
AS not A2	135	0	60	1,378	10.22	10.93
AS intended A2	138	0	156	3,934	29.17	25.12

Proportion intending to progress = 75.4%

Proportion actually progressing = 73.6%

Difference = 1.8% of those completing AS

**All centres 2006**

	No.	Minimum	Maximum	Sum	Mean	Std. Deviation
AS completer	169	1	284	6,350	37.59	41.372
AS not A2	169	0	82	2,023	11.97	14.662
AS intended A2	169	0	250	5,103	30.2	34.885

Proportion intending to progress = 80.4%

Proportion actually progressing = 68.1%

Difference = 12.2% of those completing AS

**All centres 2005**

	No.	Minimum	Maximum	Sum	Mean	Std. Deviation
AS completer	170	1	330	5,748	33.84	38.42
AS not A2	170	0	110	1,885	11.10	14.14
AS intended A2	170	0	260	4,376	25.77	31.08

Proportion intending to progress = 76.1%

Proportion actually progressing = 67.2%

Difference = 8.9% of those completing AS

The unmatched figures over the same period also indicate a reduction in the proportion intending to progress (from 80.4% in 2006 to 75.4% in 2007), but also an increase in the proportion actually progressing (to 73.6% from 68.1%). This shows a very narrow difference in 2007 of 1.8% of those AS completers not carrying on with mathematics who teachers thought intended to, when compared with 12.2% in 2006.

## Section C: Recruiting students

### QC1. What entry criteria do you use for A level mathematics?

#### Unmatched sample

This is not a matched sample question – relates to all responses in each year

#### All centres 2007

	Frequency	%
Grade A* only	0	0.0
Grade A or above	30	20.7
Grade B or above (higher tier)	49	33.8
Grade B or above (any tier)	42	29.0
Grade C	18	12.4
No entry criteria	5	3.4
Other (please specify)	1	0.7
<b>Total</b>	<b>145</b>	<b>100.0</b>

#### All centres 2006

	Frequency	%
Grade A or above	23	12.5
Grade B or above (higher tier)	62	33.7
Grade B or above (any tier)	58	31.5
No entry criteria	1	0.5
Other (please specify)	40	21.7
<b>Total</b>	<b>184</b>	<b>100.0</b>

#### All centres 2005

	Frequency	%
Grade A or above	23	11.6
Grade B or above (higher tier)	67	33.8
Grade B or above (any tier)	61	30.8
No entry criteria	1	0.5
Other (please specify)	46	23.2
<b>Total</b>	<b>198</b>	<b>100.0</b>

The figures indicate an increase in demands for all centres, with 54.5% requiring a B at higher tier or above in 2007, compared with 46.2% requiring this level in 2006 and 45.4% in 2005.

**QC2. Which groups of GCSE students do you generally target for recruitment to A level mathematics?**

**Matched sample**

Year	% of responses	All centres	State secondary	Further education	Sixth-form	Independent
<b>2006</b>	All students	3.0	0.0	0.0	33.3	0.0
	Higher and intermediate tier	24.2	33.3	0.0	66.7	0.0
	Higher tier only	69.7	61.1	100.0	0.0	100.0
	Other (please specify)	3.0	5.6	0.0	0.0	0.0
	<b>Total</b>	100.0	100.0	100.0	100.0	100.0
<b>2007</b>	All students	0.0	0.0	0.0	0.0	0.0
	Higher and intermediate tier	7.4	7.1	0.0	33.3	0.0
	Higher tier only	88.9	85.7	100.0	66.7	100.0
	Other (please specify)	3.7	7.1	0.0	0.0	0.0
	<b>Total</b>	100.0	100.0	100.0	100.0	100.0

Within the matched sample the targeted groups have moved from 69.7% specifying higher tier only in 2006 to 88.9% specifying higher tier in 2007.

**By admission policy:**

Year	% of responses	Selective	Non-selective
<b>2006</b>	All students	0.0	5.0
	Higher and intermediate tier	0.0	40.0
	Higher tier only	92.3	55.0
	Other (please specify)	7.7	0.0
	<b>Total</b>	100.0	100.0
<b>2007</b>	All students	0.0	0.0
	Higher and intermediate tier	0.0	12.5
	Higher tier only	100.0	81.3
	Other (please specify)	0.0	6.3
	<b>Total</b>	100.0	100.0

This pattern of escalation is also indicated at a view-by-selection policy – moving to 100% in selective centres requiring higher tier, (from 92.3%), and from 55% to 81.3% in the non-selective group.

## All centre responses – unmatched

<b>2007</b>	<b>Frequency</b>	<b>%</b>
All students	4	2.6
Higher and intermediate tier	25	16.4
Higher tier only	119	78.3
Other (please specify)	4	2.6
<b>Total</b>	152	100.0

<b>2006</b>	<b>Frequency</b>	<b>%</b>
All students	4	2.2
Higher and intermediate tier	35	19.0
Higher tier only	137	74.5
Other (please specify)	8	4.3
<b>Total</b>	184	100.0

This table is interesting to compare with QC1 findings, since in almost all instances the majority indicate that they target higher tier students – the rates are 93.8% for independent schools, 76.5% for state secondary, and 52.9% for further education. Sixth-form colleges are the only centre type where the modal option is higher and intermediate. This suggests a tendency to ‘recruit at the top end’.

This lends some support to the evidence discussed in last years’ report about the ‘clever core’ and teacher targeting of gifted students, thus leading to a higher achieving group where the pace and complexity of approach appropriate for the majority may be unsuited to those who are not at quite so high a level.

**By admission policy:**

<b>% of responses</b>	<b>Selective</b>	<b>Non-selective</b>
All students	1.4	3.9
Higher and intermediate tier	2.9	28.6
Higher tier only	91.3	66.2
Other (please specify)	4.3	1.3
<b>Total</b>	100.0	100.0

**2006**

<b>% of responses</b>	<b>Selective</b>	<b>Non-selective</b>
All students	1.5	2.5
Higher and intermediate tier	1.5	28.8

Higher tier only	93.8	64.4
Other (please specify)	3.1	4.2
<b>Total</b>	<b>100.0</b>	<b>100.0</b>

## Section D: Further mathematics

**QD1. Do you offer AS further mathematics at your school or college?**

### Non-matched sample

#### All centres 2007

Response	N	%
No	20	13.6
Yes	127	86.4
<b>Total</b>	<b>147</b>	<b>100.0</b>

#### All centres 2006

Response	N	%
No	35	24.0
Yes	111	76.0
<b>Total</b>	<b>146</b>	<b>100.0</b>

#### All centres 2005

Response	N	%
No	50	27.5
Yes	132	72.5
<b>Total</b>	<b>182</b>	<b>100.0</b>

In the three years of the survey – there has been a year-on-year rise in the proportion of centres offering AS further mathematics – 72.5% in 2005, 76% in 2006 and 86.4% in 2007.

### Matched sample

Centre type	N		– 2007 (%)	– 2006 (%)	– 2005 (%)
<b>Further education</b>	No	0	0.0	0.0	50.0
	Yes	11	100.0	100.0	50.0
	<b>Total</b>	<b>11</b>	<b>100.0</b>	<b>100</b>	<b>100</b>
<b>Independent</b>	No	0	0.0	10.0	30.0
	Yes	9	100.0	90.0	70.0

	<b>Total</b>	<b>9</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Sixth-form college</b>	No	0	0.0	0.0	0.0
	Yes	3	100.0	100.0	100.0
	<b>Total</b>	<b>3</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>State secondary</b>	No	0	0.0	17.6	52.9
	Yes	14	100.0	82.4	47.1
	<b>Total</b>	<b>14</b>	<b>100</b>	<b>100</b>	<b>100</b>

The matched sample shows the same tendency of increase in AS further mathematics offer as the unmatched sample over time.

#### By awarding body

	<b>Response</b>	<b>No.</b>	<b>- 2007 (%)</b>	<b>- 2006 (%)</b>
AQA	No	0	0.0	0.0
	Yes	7	100.0	100.0
	<b>Total</b>	7	100.0	100.0
Edexcel	No	0	0.0	26.7
	Yes	12	100.0	73.3
	<b>Total</b>	12	100.0	100.0
OCR (MEI)	No	0	0.0	0.0
	Yes	3	100.0	100.0
	<b>Total</b>	3	100.0	100.0
OCR (not MEI)	No	0	0.0	0.0
	Yes	5	100.0	100.0
	<b>Total</b>	5	100.0	100.0

#### QD1a. Is this because there is lack of:

<b>Response</b>	<b>2007 Frequency</b>	<b>2006 Frequency</b>
Available staff	0	0
Experienced staff	0	0
Funding	0	0
Student demand	0	1
Other (please specify)	0	3
<b>Total</b>	0	4

There is very little data in the matched sample. Reviewing the responses from all centres in each year we see:

**2007**

Response	Frequency
Available staff	0
Experienced staff	1
Funding	1
Student demand	16
Other (please specify)	3
<b>Total</b>	<b>21</b>

**2006**

Response	Frequency
Available staff	2
Experienced staff	0
Funding	0
Student demand	28
Other (please specify)	7
<b>Total</b>	<b>37</b>

Over the two years that the question has been asked, the most frequent reason for those not offering has been 'student demand'.

**QD2. How many students do you have studying AS further mathematics?**

All 33 centres, excluding those with 0 students

AS further maths	No.	Minimum	Maximum	Sum	Mean	Std. Deviation
<b>2005</b>	29	1	26	178	6.07	5.58
<b>2006</b>	25	1	36	149	6.03	7.21
<b>2007</b>	20	1	39	180	8.81	8.26

The figures for the matched sample show an increase in the mean number of students from 6.7 in 2005 to 8.8 in 2007.

The same question in the unmatched sample yielded a change in the mean number of AS students from 6.34 in 2005 to 6.47 (or 7.56 excluding those with 0 students) in 2006 to 8.21 in 2007 (8.91 excluding those with no students).

**Further mathematics cohort rate by centre type (matched data):**

Centre type	2005			2006			2007		
	Total AS	Total FMAS	%FM	Total AS	Total FMAS	%FM	Total AS	Total FMAS	%FM
State secondary	18	15	83.3	18	13	72.2	18	10	55.6
Further education	2	1	50.0	2	1	50.0	1	1	100.0
Sixth-form college	3	2	66.7	3	3	100.0	3	2	66.7
Independent	10	10	100.0	10	9	90.0	9	8	88.9

**QD3. Are your students taking further mathematics as:**

Year	Centre type	All centres	State secondary	Further education	Sixth-form	Independent
2006	AS only in 1 year	11	7	1	1	1
	AS only in 2 years	7	4	0	0	2
	A level over 1 year	3	0	0	1	2
	A level over 2 years	15	10	0	1	3
	Other (please specify)	3	0	0	1	3
	AS in 1 year and A level in 2 years or combination over 2 years	0	0	0	0	0
2007	AS only in 1 year	0	0	0	0	0
	AS only in 2 years	1	0	0	0	1
	A level over 1 year	4	2	0	1	2
	A level over 2 years	12	5	1	2	4
	Other (please specify)	5	3	0	0	1
	AS in 1 year and A level in 2 years or combination over 2 years	5	4	0	0	0

**Additional analysis – not matched sample**

In 2007 AS further mathematics cohort = 12.9% of AS cohort – although AS further mathematics students will not always be drawn from the current AS cohort.

In 2006 AS further mathematics cohort = 8% of AS cohort – although AS further mathematics students will not always be drawn from the current AS cohort.

In 2005 AS further mathematics cohort = 10.9% of AS cohort - although AS further mathematics students will not always be drawn from the current AS cohort.

Over the three years there has been a net rise in the percentage of the AS cohort that are studying AS further mathematics – from 10.9% in 2005 to 12.9% in 2007 (there was a report of 8% in 2006 so this is not be a stable trend)

**QD7. Do you offer A2 further mathematics at your school or college?**

Unmatched data – responses over time

**All centres 2007**

Response	N	%
No	12	9.6
Yes	113	90.4
<b>Total</b>	<b>125</b>	<b>100.0</b>

**All centres 2006**

Response	N	%
No	51	29.1
Yes	124	70.9
<b>Total</b>	<b>175</b>	<b>100.0</b>

**All centres 2005**

Response	N	%
No	51	28.8
Yes	126	71.2
<b>Total</b>	<b>177</b>	<b>100.0</b>

Over time the proportion of centres offering A2 further mathematics has increased from 71.2% in 2005 to a reported 90.4% in 2007 (oddly higher than those reportedly offering AS, although the AS question had a response rate of 147 compared with 125 for A2, so that it is likely that the respondents to this question were largely a subset of the AS further mathematics centres. It is also the case that in 2006 the questions about A2 came before the AS questions.) The proportions in 2005 and 2006 were almost the same.

**Matched data**

Centre type	No.	-2007 (%)	- 2006 (%)	- 2005 (%)
<b>All centres</b>	No	1	3.8	6.1
	Yes	25	96.2	93.9
	<b>Total</b>	<b>26</b>	<b>100.0</b>	<b>100</b>

<b>Further education</b>	No	0	0.0	50.0	50.0
	Yes	1	100.0	50.0	50.0
	<b>Total</b>	<b>1</b>	<b>100.0</b>	<b>100</b>	<b>100</b>
<b>Independent</b>	No	0	0.0	0.0	10.0
	Yes	8	100.0	100.0	90.0
	<b>Total</b>	<b>8</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Sixth-form college</b>	No	0	0.0	0.0	0.0
	Yes	3	100.0	100.0	100.0
	<b>Total</b>	<b>3</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>State secondary</b>	No	1	7.1	5.6	12.5
	Yes	13	92.9	94.4	87.5
	<b>Total</b>	<b>14</b>	<b>100</b>	<b>100</b>	<b>100</b>

**By awarding body**

	Response	No.	-2007 (%)	-2006 (%)
AQA	No	0	0.0	0.0
	Yes	7	100.0	100.0
	<b>Total</b>	<b>7</b>	<b>100.0</b>	<b>100.0</b>
Edexcel	No	0	0.0	6.3
	Yes	11	100.0	93.8
	<b>Total</b>	<b>11</b>	<b>100.0</b>	<b>100.0</b>
OCR (MEI)	No	1	33.3	16.7
	Yes	2	66.7	83.3
	<b>Total</b>	<b>3</b>	<b>100.0</b>	<b>100.0</b>
OCR (not MEI)	No	0	0.0	0.0
	Yes	5	100.0	100.0
	<b>Total</b>	<b>5</b>	<b>100.0</b>	<b>100.0</b>

**QD7a. Is this because there is lack of:**

Response	2007 Frequency	2006 Frequency
Available staff	0	0
Experienced staff	0	0
Funding	0	1
Student demand	1	1
Other (please specify)	0	2
<b>Total</b>	<b>1</b>	<b>4</b>

The matched sample shows very few responding in either year – reviewing the full response year on year very few centres have responded saying they do not offer A2 in

2007, and thus there is no 'majority' to observe. In 2006 the most frequent response by far was 'student demand').

#### QD9. How many students do you have studying A2 further mathematics?

All 33 centres, excluding those with 0 students

Number of A2 FM students	N	Minimum	Maximum	Sum	Mean	Std. Deviation
2005	20	2	19	120	5.94	4.19
2006	26	1	24	144	5.56	5.29
2007	21	1	38	159	7.44	8.52

No. A2 September students	N	Minimum	Maximum	Sum	Mean	Std. Deviation
2005	20	6	95	661	32.70	20.01
2006	26	3	128	739	28.49	24.20
2007	21	3	249	871	40.85	49.70

In 2007 A2 further mathematics cohort = 18.3% of A2 cohort – although A2 further mathematics students will not always be drawn from the current A2 cohort. This figure was 19.5% in 2006 and 18.2% in 2005. In the unmatched sample the figures were 2007 = 15.4% of A2 cohort, 16% in 2006 and 14% in 2005.

By awarding body 2007

Awarding body	2006			2007		
	No.	Sum	Mean	No.	Sum	Mean
AQA	6	25	4.17	6	43	7.17
Edexcel	13	87	6.69	11	90	8.18
OCR (MEI)	3	16	5.33	2	30	15.00
OCR (not MEI)	5	39	7.80	3	18	6.00