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FROM THE EXAMINATIONS DEPARTMENT

Final Report January 2012 Part 1 FRCOphth Examination

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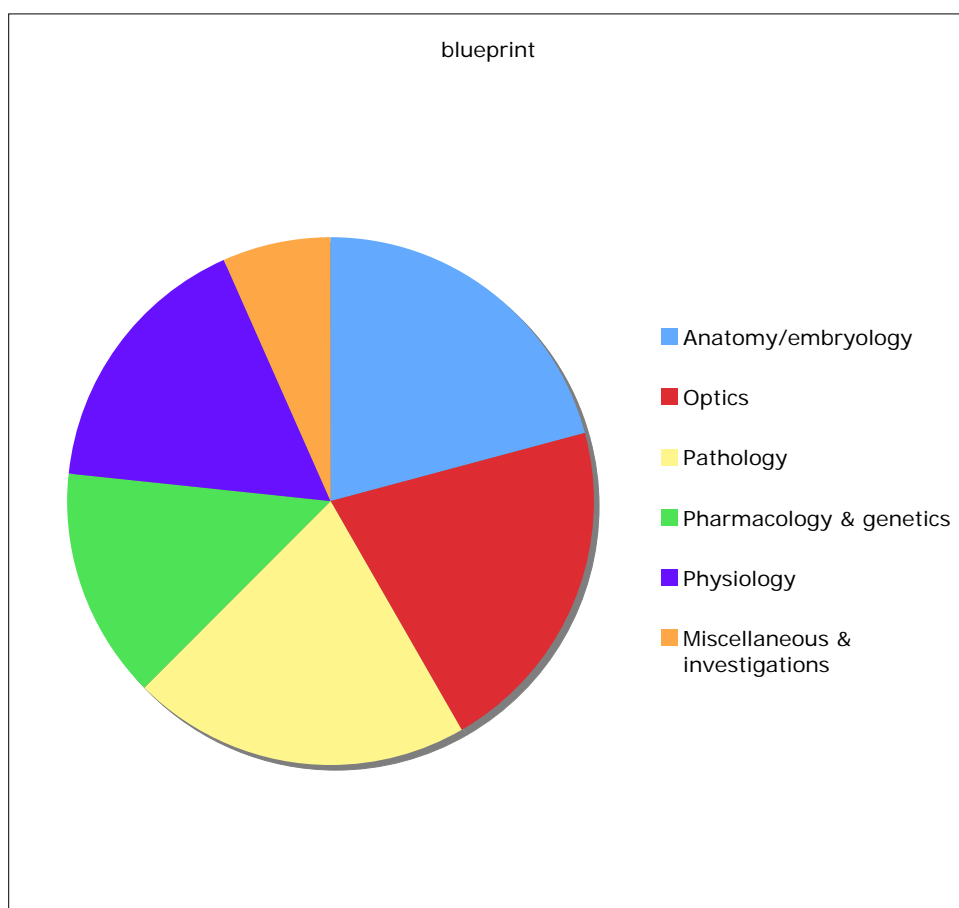
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The seventeenth Part 1 FRCOphth examination took place on 16th January 2012. 66 candidates sat the examination, of whom 20 (33%) fulfilled the criteria required to pass the examination overall. One candidate sat the MCQ Paper but did not present for the CRQ paper.

MCQ examination

Content

Topic	Jan 2010	May 2010	Oct 2010	Jan 2011	May 2011	Oct 2011	Jan 12
Anatomy/embryology	19	22	21	23	25	23	25
Optics	16	16	16	24	25	25	25
Pathology	36	23	33	24	26	23	25
Pharmacology & genetics	21	22	23	18	15	18	17
Physiology	18	27	18	21	22	24	20
Miscellaneous & investigations	10	10	7	7	7	7	8
Total	120	120	118	116	120	120	120



MCQ paper statistics

Mean score:	64/116	(55%)
Median score:	63/116	(54%)
Standard deviation:	12.84	(11.1%)
Candidates:	66	
KR20: (measurement of reliability)	0.85	
Standard error of measurement (SEM):	4.95	
Range of marks:	44-100	(38%-86%)
Pass mark derived from Standard Setting:	66/116	(57%)
Pass mark – 1 SEM	61/116	(53%)
Pass rate:	28/66	(42%)

Distribution of scores

Range of scores	Distribution	Number
1-30		0
31-40		0
41-50	////	9
51-60	//// //// //// //	17
61-70	//// //// // //// ////	25
71-80	//// //	7
81-90	////	5
91-100	///	3
101-120		0
Total		66

Standard setting

The pass mark for the paper was agreed using the Ebel method.

	Difficult	Moderate	Easy	Total
Essential	0	17	35	52
Important	2	28	19	49
Supplementary	6	7	2	15
Total	8	52	56	116*

*Four questions were removed from the examination paper after review by the Senior Examiner.

The Part 1 FRCOphth Sub-Committee considered the success of a minimally competent candidate in each category as below:

	Difficult	Moderate	Easy	
Essential	0.55	0.65	0.75	
Important	0.45	0.5	0.55	
Supplementary	0.25	0.25	0.25	

	Difficult	Moderate	Easy	Total
Essential	0	11.05	26.25	37.3
Important	0.9	14	10.45	25.35
Supplementary	1.5	1.75	0.5	3.75
TOTAL	2.4	26.8	37.2	66.4

The MCQ pass mark = 66.4/116 (57%)

Comparison of pass marks and rates for last 7 MCQ papers

	Jan 10	May 10	Oct 10	Jan 11	May 11	Oct 11	Jan 12
Candidates	50	79	89	62	95	122	66
Mean score	63	61	67	62	64	67	64
Reliability (KR 20)	0.794	0.848	0.818	0.815	0.86	0.87	0.85
SEM	4.94	4.89	4.83	4.9	4.96	4.87	4.95
Standard setting	Ebel	Ebel	Ebel	Ebel	Ebel	Ebel	Ebel
Pass mark	76 (63%)	72 (60%)	72 (61%)	69 (59%)	65 (54%)	67 (56%)	66 (57%)
Modified pass mark	71 (59%)	67 (56%)	NA*	NA*	NA*	NA*	NA*
33% discrimination							
Negative	15	12	17	14	9	10	6
Poor	58	52	54	53	56	44	56
Good	31	38	29	38	36	44	39
Excellent	16	18	18	11	16	22	15
Facility							
Difficult (<25%)	20	15	10	8	10	7	5
Moderate	86	84	86	93	92	91	98
Easy (>75%)	14	21	22	15	18	22	13
Questions	120	120	118	116	120	120	116
Pass rate	15 (30%)	28 (35%)	29 (33%)	15 (24%)	47 (51%)	67 (55%)	22 (42%)

* The pass mark is no longer reduced by 1 SEM.

The CRQ paper

The examination in January 2012 covered the following areas:

Question	Subject	Topic	Sub-sections	Data provided
1	Anatomy	Orbital apex	4	Diagram
2	Pathology	Dermatopathology	6	4 Photomicrographs
3	Pathology	Orbital pathology	4	3 Photomicrographs
4	Optics	Concave mirror	3	None
5	Investigations	Biometry	4	IOL master data
6	Optics	Lasers	4	None
7	Investigations	Tonometer	6	Photograph and diagram
8	Optics	Prism	4	Photograph
9	Management	Uveitis	4	Photograph
10	Investigations	Neuro-imaging	4	CT scan
11	Investigations	Hess Chart	5	Hess chart
12	EBM	Screening	5	Table of data

Statistics

Mean score:	56/120	(47%)
Median score:	58/120	(48%)
Standard deviation:	15	(12.0%)
Range of scores:	14-90	(11%-74%)
Reliability: Cronbach alpha	0.87	
Standard error of measurement:	5	
Pass mark derived from Standard Setting:	65/120	(54%)
Pass mark – 1 SEM	60/120	(50%)
Pass rate	17/65*	(26%)

* One candidate did not sit the CRQ paper

Distribution of scores

Range of marks	Distribution	Number
0-30	//	2
31-40	//// /	6
41-50	//// ///	8
51-60	//// //// //// //// /	21
61-70	//// //// / / / / /	18
71-80	//// ///	8
81-90	//	2
91-100		0
101-120		0
Total		65

Two examiners marked each question in the CRQ papers and the average mark from each was used to produce the candidate mark. Each question has a maximum possible 10 marks. Candidate performance was variable for each question, with mean, median, minimum and maximum scores (with standard deviations) of:

Q	Subject	Mean	Median	SD	Min	Max	Correlation between 2 markers (Mark)	Correlation between 2 markers (Global judgement)
1	Anatomy	4.6	4.5	2.03	0.5	9	0.91	0.76
2	Pathology	3.3	3	2.56	0	9	0.91	0.68
3	Pathology	4.2	3	5.96	0	9.5	0.92	0.78
4	Optics	3.8	4	2.65	0	9.5	0.96	0.87
5	Investigations	7.1	6.5	2.68	0	10	0.84	0.63
6	Optics	5.5	6	3.01	0	9.5	0.95	0.91
7	Investigations	7.0	7	1.67	2.5	10	0.75	0.63
8	Optics	2.6	2.5	2.18	0	8	0.92	0.62
9	Management	5.5	5	1.37	2	7.5	0.75	0.59
10	Investigations	5.7	6	1.73	1.5	9	0.90	0.66
11	Investigations	4.6	5	2.43	0	9.5	0.90	0.67
12	EBM	4.2	4	2.75	0	9.5	0.95	0.86

Candidates performed badly or were ill prepared for almost all questions apart from question 7. Candidate performance was particularly poor in question 8.

There was good correlation between examiner marks and reasonable correlation between examiner global judgments with the exception of question 9.

33% Item discrimination (ID) and facility (F) for each question and examiner:

Good discrimination Poor discrimination Easy Difficult

Q	Subject	33% ID examiner B	F examiner B	33% ID examiner A	F examiner A
1	Anatomy	0.366	0.48	0.268	0.52
2	Pathology	0.073	0.31	0.146	0.36
3	Pathology	0.268	0.5	0.341	0.34
4	Optics	0.244	0.44	0.220	0.47
5	Investigations	0.195	0.61	0.244	0.63
6	Optics	0.390	0.64	0.390	0.58
7	Investigations	0.171	0.72	0.171	0.83
8	Optics	0.195	0.2	0.146	0.27
9	Management	0.024	0.78	0.049	0.56
10	Investigations	0.098	0.78	0.122	0.61
11	Investigations	0.293	0.41	0.293	0.34
12	EBM	0.195	0.63	0.268	0.47

Question 8 had a very poor 33% item discrimination index and a very low facility. Questions 7, 9 & 10 had relatively high facilities and hence relatively low 33% item discrimination index. Questions 1, 3, 6 & 11 performed well.

Standard setting

The borderline candidate method was used to identify the pass mark for the CRQ. The examiners who marked the CRQ paper were asked to allocate a mark according to the marking scheme provided and, in addition, class the candidate's performance as a pass, fail or borderline. The sum of each median borderline mark was used to produce the pass mark:

	Topic	Examiners A				Examiners B			
		No. Fail	No. Border	No. Pass	Median Border	No. Fail	No. Border	No. Pass	Median Border
1	Anatomy	23	18	24	5	26	25	14	4.5
2	Pathology	31	22	12	5	45	8	12	5
3	Pathology	36	24	5	5	32	6	27	6
4	Optics	29	13	23	5	37	2	26	5
5	Investigations	16	24	25	7	24	7	34	5
6	Optics	24	10	31	6	21	10	34	6
7	Investigations	10	26	29	6.5	8	20	37	6
8	Optics	42	12	11	5	52	11	2	4.5
9	Management	41	18	6	5	17	27	21	5
10	Investigations	26	15	24	5	19	19	27	6
11	Investigations	41	16	8	6	42	14	9	6
12	EBM	34	2	28	4	25	11	29	5
Pass mark					64.5				64

Pass mark = 64

Questions 5,6 & 7 were 'easy' or well prepared for with >50% of candidates passing (global judgment by both examiners)

Question 2,3,4,11 & 12 were 'difficult' or ill prepared for with >50% of candidates failing (global judgment by both examiners)

Comparison to previous years

	Jan 10	May 10	Oct 10	Jan 11	May 11	Oct 11	Jan 12
Mean score	61%	53%	52%	59%	55%	57%	47%
Median score	63%	53%	56%	61%	56%	58%	48%
Reliability	0.82	0.843	0.856	0.869	0.92	0.86	0.87
SEM	6.6	6.5	6	9*	6	6	5
Pass mark	58%	57%	54%	58%	58%	56%	54%
Modified pass mark	53%	52%	NA*	NA*	NA*	NA*	NA*
Pass rate	82%	56%	56%	61%	64%	59%	26%
Correlation with MCQ	0.79	0.72	0.8	0.79	0.79	0.73	0.66

* The pass mark is no longer reduced by 1 SEM.

The correlation between the two parts of the examination remains at an acceptable level.

Overall Results

To pass the Part 1 FRCOphth examination candidates are required to:

1. Obtain a combined mark from both papers that equals or exceeds the combined pass marks obtained by the standard setting exercise explained above.
2. Obtain a mark in both papers that equals or exceeds the pass mark minus 1 standard error of measurement for each paper.

A candidate is therefore allowed to compensate a poor performance in one paper by a very good performance in the other paper. They cannot compensate for an extremely poor performance in one paper whatever the combined mark.

The minimum mark required in order to meet standard 1 above for this examination was **130/240**. The minimum mark required in each paper (to meet standard 2 above) was **61/116** in the MCQ paper and **59/120** in the CRQ paper.

21 candidates gained a total mark that met standard 1 above but 1 candidate failed to obtain the minimum mark required in the CRQ paper and therefore failed the examination overall.

20 candidates passed the examination.

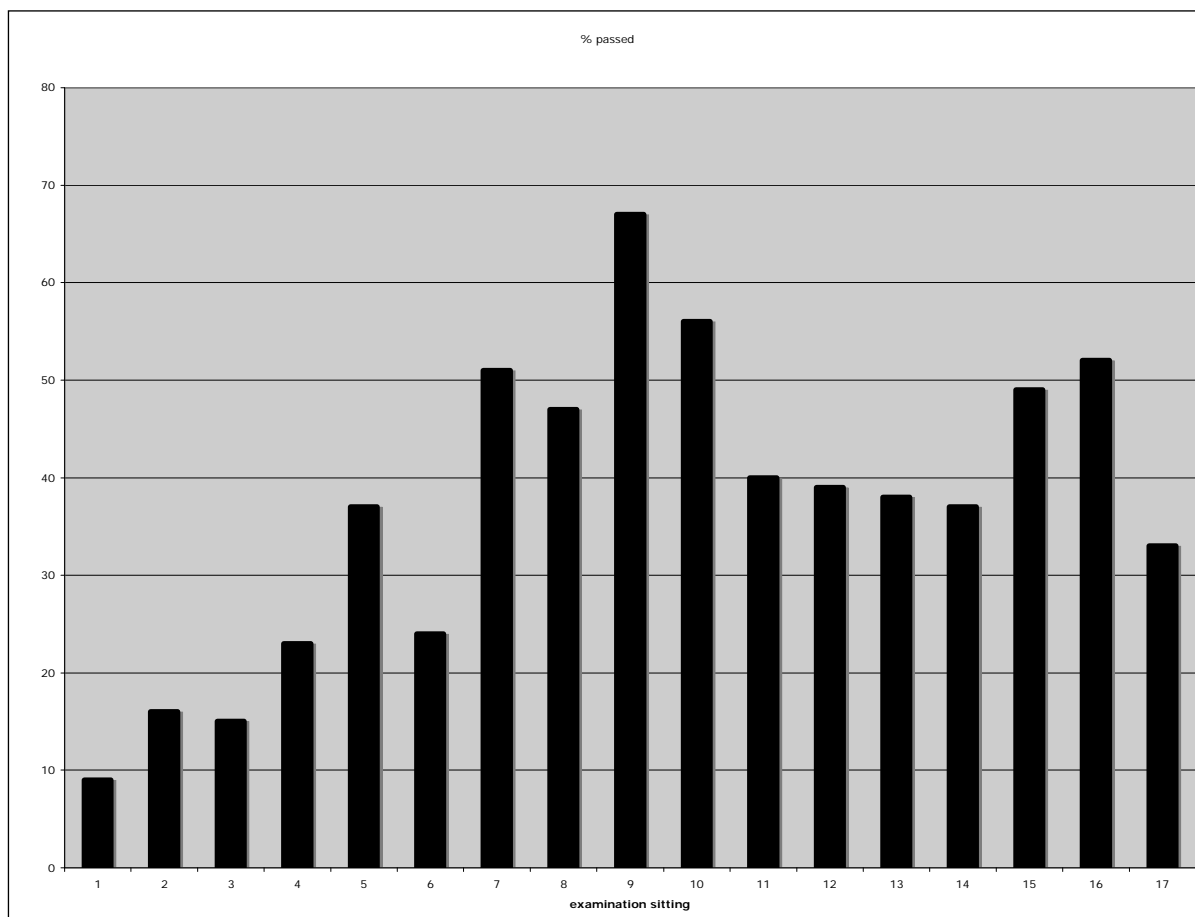
Distribution of scores

Range of marks	Distribution	Number
<60	/	1
61-70	//	2
71-80	//	2
81-90	/	1
91-100	//// //	8
101-110	//// //	8
111-120	//// ////	10
121-130	//// //// //	14
131-140	//// /	6
141-150	//// //	7
151-160	///	4
161-170	/	1
171-180	/	1
181-190	/	1
191-200		0
Total		66

Mean 120/236 (51%) Median 121/236 (51%) Range 46-189 (19-80%)

Comparison to previous years:

Examination	Candidates	Passed examination	% passed	MCQ pass mark %	CRQ pass mark %
Oct 2006	33	3	9	58	62
Jan 2007	24	4	16	60	43
May 2007	32	5	15	50	64
Oct 2007	56	13	23	51	59
Jan 2008	73	27	37	56	55
May 2008	66	16	24	57	48
Oct 2008	88	45	51	58	51
Jan 2009	79	37	47	61	57
July 2009	49	33	67	63	58
Oct 2009	101	56	56	62	56
Jan 2010	50	20	40	63	58
May 2010	79	31	39	60	57
Oct 2010	89	34	38	61	54
Jan 2011	62	23	37	59	58
May 2011	95	47	49	54	57
Oct 2011	122	63	52	56	56
Jan 2012	66	20	33	57	54



Breakdown of results by training

	Failed	Passed	Total
In OST	21	10	31
Not in OST	25	10	35
Total	45	20	66

These differences are not significant ($p=0.1$)

Breakdown of results by deanery

Deanery	Failed	Passed	Total
East Midlands	1	0	1
East Scotland	0	0	0
East of England	2	0	2
London	1	1	2
Mersey	1	1	2
N Scotland	0	1	1
North Western	0	0	0
Northern	2	1	3
N Ireland	1	0	1
Oxford	0	0	0
Peninsula	2	0	2
S Yorks & S Humber	1	1	2
SE Scotland	0	2	2
Severn	1	0	1
West Midlands	4	1	5
West Scotland	1	0	1
Wales	2	0	2
Wessex	2	1	3
Yorkshire	0	1	1
Total	21	10	31

Breakdown of results by stage of training

Stage (includes FTSTA)	Failed	Passed	Total
ST1	8	5	13
ST2	7	3	10
ST3	2	0	2
Unknown	4	2	6
Total in OST	21	10	31

Breakdown of results by gender*

	Failed	Passed	Total
Female	20	11	31
Male	25	9	33
Total	45	20	65

* Gender not declared by 1 candidate

These differences are not significant ($p=0.59$)

Breakdown of results by country of qualification

	Failed	Passed	Total
UK	22	11	33
Outside UK	24	9	32
Total	46	20	66

These differences are not significant ($p=0.79$)

Breakdown of results by declared ethnicity

Ethnicity	Failed	Passed	Total
White	17	3	20
Non-white	19	15	33
Unknown	10	2	12
Total	46	20	66

These differences are statistically significant for all candidates ($p=0.036$), but there is no difference in the success of white/non-white candidates in OST.

Breakdown of results by first language*

	Failed	Passed	Total
English	20	12	32
Other	17	7	24
Total	36	19	56

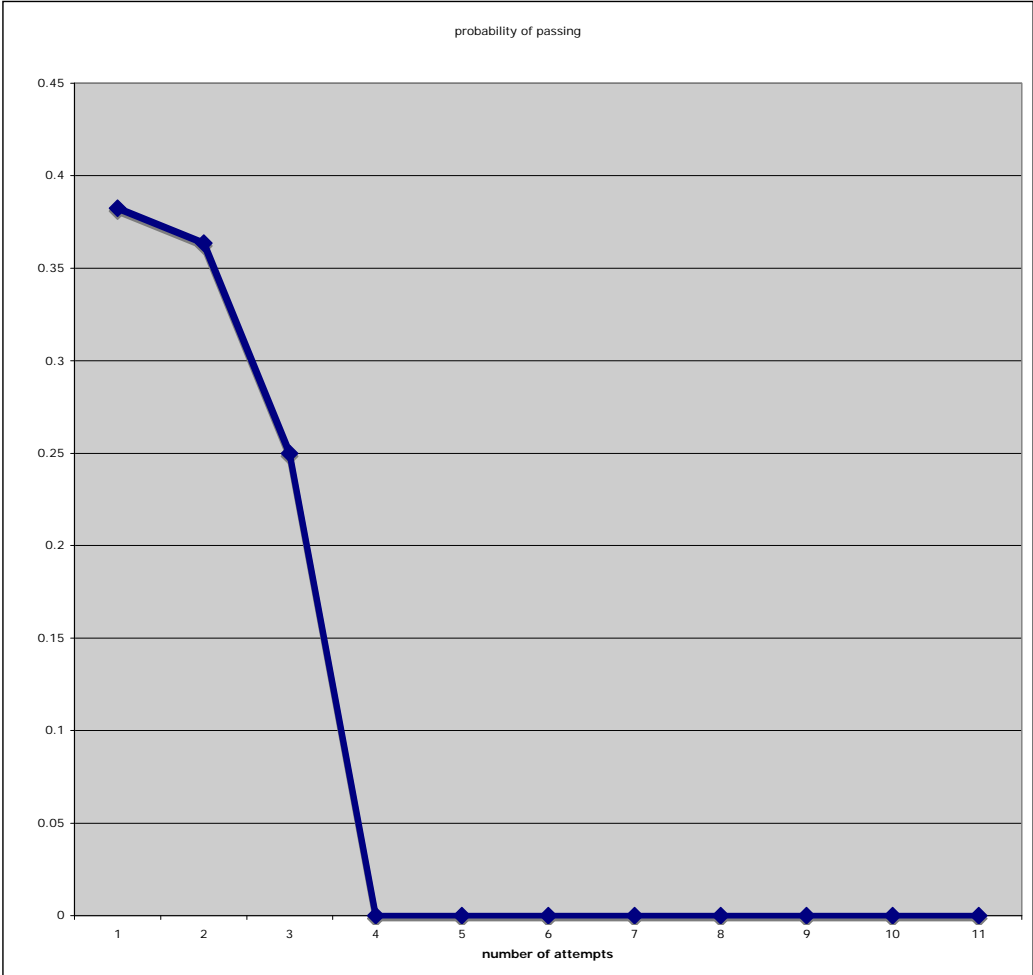
* First language not declared by 10 candidates

These differences are not significant ($p=0.57$)

Breakdown of results by number of previous attempts

Attempts	Failed	Passed	Total
1 (First)	22	13	35
2	7	4	11
3	9	3	12
4	4	0	4
5	2 (1 in ST3)	0	2
6	0	0	0
7	0	0	0
8	0	0	0
9	1 (ST3)	0	1
10	0	0	0
11	1 (ST2)	0	1
Any resit	24	7	31
Total	46	20	66

Probability of Passing the Part 1 FRCOphth Examination



Summary

66 candidates presented themselves for the examination. The January sitting of the examination usually has the smallest number of candidates.

The pass mark and reliability in both components of the examination is similar to previous years.

Mr Michael Nelson BSc Hons FRCOphth MEd
Education Advisor

March 2012

Appendix 1**Overall results for each deanery**

Result data by deanery has been available since October 2010. The summary results for each deanery are listed below:

Deanery	Number of candidates	Pass rate
East Scotland	2	100
Yorkshire	8	88
S Yorks & S Humber	7	71
SE Scotland	7	71
North Western	3	67
Severn	6	67
London	31	58
N Scotland	4	50
Northern	11	45
East Midlands	9	44
Wales	9	44
Mersey	7	43
East of England	12	42
N Ireland	5	40
West Midlands	24	33
West Scotland	9	33
Wessex	26	31
Peninsula	7	14
Oxford	3	0
Total	189	47