Table 10.1 Variance components model: outcome -- second-year reading score

	N = 1,221	
Fixed Part	Estimate	Standard error
Sex		
Male	0.000	0.000
Female	-2.087	1.077
First-year reading score	5.316[c]	0.160
Socio-economic group	1.530[a]	0.649
Country of origin		
UK/Eire	0.000	0.000
South Asian	-4.595[b]	1.405
Other	-1.225	2.204
Grand mean	39.987	

a Significant at the 95 per cent level of confidence.
b Significant at the 99 per cent level of confidence.
c Significant at the 99.9 per cent level of confidence.

The above estimates are for the best fit model, which has the grand mean, country of origin and socio-economic group in the random part.

Random Part	Deviance	Reduction in deviance from (1)	Reduction in deviance from (2)	Added degrees of freedom	Signif-icance
(1) Initial	10568.3				
(2) With grand mean in random part	10515.1	53.2		2	99.9
With GM and first-year reading score in random part	10513.9		1.2	2	No
With GM and sex in random part	10511.8		3.3	2	No
With GM and country of origin in random part	10501.3		13.8	4	99
With GM and socio-economic group in random part	10508.1		7.0	2	95
With GM, country of origin and socio-economic group in random part	10494.8		20.3	6	99

Table 10.2 Examples of second-year reading scores predicted by the variance components model, by first-year reading score, socio-economic group, and country of origin

Predicted second-year reading scores

	First-year reading score		
	2	6	10
Male originating from UK/Eire by socio-economic group			
Neither parent has worked	52.2	73.4	94.7
Unskilled manual	53.7	74.9	96.2
Semi-skilled manual	55.2	76.5	97.7
Skilled manual	56.7	78.0	99.3
White collar	58.3	79.5	100.8
Professional or managerial	59.8	81.1	102.3
Male from a skilled manual family originating from			
UK/Eire	56.7	78.0	99.3
South Asian	52.1	73.4	94.7
Other	55.5	76.8	98.0

Table 10.3 Examples of second-year reading scores predicted by the variance components model, by school

	Predicted second-year reading scores
Male with second-year reading score of 6, belonging to skilled manual family originating from UK/Eire at school	
12	81.6
14	87.3
15	78.5
21	71.5
22	81.6
23	82.1
24	73.9
25	90.6
31	83.2
32	74.2
33	91.1
34	73.7
35	60.6
41	78.3
42	79.2
43	62.4
44	75.9
45	78.6

Table 10.4 Variance components model: outcome -- second-year maths score

Fixed Part	Estimate	Standard error
Sex		
Male	0.000	0.000
Female	-0.067	0.396
First-year maths score	1.297[a]	0.040
Socio-economic group	0.539[a]	0.150
Country of origin		
UK/Eire	0.000	0.000
South Asian	0.617	0.474
Other	-1.254[b]	0.535
Grand mean	8.975	

a Significant at 99.9 per cent level of confidence.
b Significant at 95 per cent level of confidence.

The above estimates are for the best fit model, which has the grand mean and the first-year maths score in the random part.

Random Part	Deviance	Reduction in deviance from (1)	Reduction in deviance from (2)	Added degrees of freedom	Signif-icance
(1) Initial	9121.0				
(2) With grand mean (GM) in random part	9071.9	49.1		2	99.9
With GM and first-year maths score in random part	9062.7		9.2	2	99
With GM and sex in random part	9071.3	0.6		2	No
With GM and socio-economic group in random part	9069.2		2.7	2	No
With GM and country of origin in random part	9071.2		0.7	4	No

Table 10.5 Examples of second-year maths scores predicted by the variance components model, by first-year maths score, socio-economic group, and country of origin

Predicted second-year maths scores

	First-year maths score		
	9	16	23
Male originating from UK/Eire by socio-economic group			
Neither parent has worked	21.2	30.3	39.4
Unskilled manual	21.7	30.8	39.9
Semi-skilled manual	22.3	31.4	40.4
Skilled manual	22.8	31.9	41.0
White collar	23.3	32.4	41.5
Professional or managerial	23.9	33.0	42.1
Male belonging to a skilled manual family originating from			
UK/Eire	22.8	31.9	41.0
South Asian	23.4	32.5	41.6
Other	21.6	30.6	39.7

Table 10.6 Example of second-year maths scores predicted by the variance components model, by school

	Predicted second-year maths scores
Male with first-year maths score of 16 from skilled manual family originating from UK/Eire in school	
12	27.2
14	32.8
15	30.7
16	29.4
21	33.3
22	34.3
23	34.9
24	29.5
25	30.5
31	34.1
32	31.2
33	35.6
34	33.7
35	32.6
41	33.2
42	33.1
43	30.5
44	31.3
45	28.1

Table 10.7 Variance components model: outcome -- second-year reading score, with use of English score added: south Asians only

	N = 298	
	Estimate	Standard error
First-year reading score	5.09	0.33
Socio-economic group	1.51	0.71
Sex		
Male	0.00	0.00
Female	-3.23	1.98
Use of English score	-1.23	0.50
Grand mean	41.723	

Deviance = 84,573 with 293 degrees of freedom
The deviance of a similar model but without the use of English score was 86,303
The drop in deviance when the use of English score is added to the model is significant at better than the 99.9 per cent level of confidence.

Table 10.8 Variance components model: outcome -- second year reading score, with participation added

	N = 1,196	
Fixed Part	Estimate	Standard error
Sex		
Male	0.00	0.00
Female	-1.37	1.08
Socio-economic group	1.96	0.42
Participation score	1.15	0.47
First-year reading score	5.34	0.17
Country of origin		
UK/Eire	0.00	0.00
South Asian	-4.22	1.32
Other	-3.14	1.53
Grand mean	36.76	

Table 10.9 Variance components model: outcome -- second-year maths score, with participation added

	N = 1,333	
Fixed Part	Estimate	Standard error
Sex		
Male	0.00	0.00
Female	-0.03	0.38
Socio-economic group	0.43	0.15
Participation score	0.38	0.17
First-year maths score	1.32	0.03
Country of origin		
UK/Eire	0.00	0.00
South Asian	0.44	0.46
Other	-1.94	0.54
Grand mean	8.50	

Table 10.10 Variance components model: outcome -- second-year reading score, with index of blame added

	N = 1,201	
Fixed Part	Estimate	Standard error
Sex		
Male	0.00	0.00
Female	-2.80	1.12
Socio-economic group	1.78	0.42
Index of blame	-1.25	0.46
First-year reading score	5.34	0.16
Country of origin		
UK/Eire	0.00	0.00
South Asian	-4.76	1.36
Other	-1.43	1.52
Grand mean	41.76	

Table 10.11 Variance components model: outcome -- second-year maths score, with index of blame added

	N = 1,341	
Fixed Part	Estimate	Standard error
Sex		
Male	0.00	0.00
Female	-0.61	0.41
Socio-economic group	0.55	0.15
Index of blame	-0.72	0.16
First-year maths score	1.30	0.03
Country of origin		
UK/Eire	0.00	0.00
South Asian	0.10	0.48
Other	-1.34	0.54
Grand mean	10.56	