

Maryland High School Assessment  
Summary of Field Test Results May 2001

Table 1. Proportion of Students in Total Sample

	Algebra	Biology	English	Geometry	Government
Female	50	49	49	51	50
Male	47	48	48	47	49
African American	28	29	32	23	30
American Indian	1	1	1	1	1
Asian	6	6	5	7	5
Hispanic	4	4	4	4	5
White	56	54	53	59	54
Other	5	5	5	6	5
Baltimore City	8	5	6	6	4

Table 2. Number of Items in Each Field Test Form

	Form		SR	SPR	BCR	ECR
Algebra	L	Op	34	7	5	3
		Ft	7	4	1	1
	M	Anc	29	0	0	0
		Ft	35	7	5	3
	N	Ft	50	7	6	4
	P	Anc	29	0	0	0
		Ft	35	7	5	3
Q	Ft	48	8	7	3	
R	Ft	46	10	7	3	
Biology	J	Op	48	0	7	0
		Ft	11	0	2	0
	L	Anc	26	0	0	0
		Ft	52	0	7	0
	M	Ft	58	0	9	0
N	Ft	58	0	9	0	
P	Ft	58	0	9	0	
English	K	Op	50	0	2	1
		Ft	12	0	1	0
	M	Anc	28	0	0	0
		Ft	45	0	2	1
	N	Ft	65	0	3	1
	P	Ft	62	0	3	1
Q	Ft	68	0	3	1	
R	Ft	62	0	3	1	
Geometry	N	Op	33	9	4	3
		Ft	5	5	1	1
	Q	Anc	30	0	0	0
		Ft	27	11	5	4
R	Ft	33	14	5	4	
S	Ft	25	16	4	4	
Government	K	Op	50	0	7	1
		Ft	18	0	2	0
	M	Anc	25	0	0	0
		Ft	43	0	9	1
	N	Ft	68	0	9	1
P	Ft	68	0	9	1	

Table 3. Distribution of Mean Percent Correct (p-values) for Selected-Response Items

Mean Percent Correct	Algebra (% of items)	Biology (% of items)	English (% of items)	Geometry (% of items)	Government (% of items)
>.80	7	2	4	1	3
.71 - .80	9	10	18	8	14
.61 - .70	18	19	24	9	19
.51 - .60	19	18	27	36	16
.41 - .50	17	23	14	21	24
.30 - .40	21	19	9	19	15
<.30	9	11	4	7	8
Not Scored	0	0	0	0	0
Total Number of Items	221	237	314	90	197
Mean	.52	.51	.58	.50	.53
SD	.18	.16	.15	.14	.17
Min	.11	.18	.12	.15	.13
Max	.93	.89	.90	.84	.93

Table 4. Distribution of Mean Percent Correct (p-values) for Student-Produced Response Items

Mean Percent Correct	Algebra (% of items)	Geometry (% of items)
>.80	9	0
.71 - .80	12	0
.61 - .70	9	7
.51 - .60	28	13
.41 - .50	19	20
.30 - .40	9	22
<.30	14	39
Not Scored	0	0
Total Number of Scored Items	43	46
Mean	.54	.35
SD	.19	.16
Min	.20	.08
Max	.89	.69

Table 5. Distribution of Mean Percent of Total Possible Number of Points for Brief Constructed-Response Items

Mean of Percent Of Total Possible Points	Algebra (% of items)	Biology <sup>a</sup> (% of items)	English (% of items)	Geometry (% of items)	Government (% of items)
>.80	0	0	0	0	0
.71 - .80	0	0	0	0	0
.61 - .70	3	0	0	27	0
.51 - .60	35	0	0	13	0
.41 - .50	16	0	87	47	31
.30 - .40	32	19	0	7	62
<.30	6	67	0	7	7
Not Scored	6	14	13	0	0
Number of Points Possible per Item	3	4	4	3	4
Total Number of Scored Items	29	31	13	15	29
Mean	.44	.27	.46	.50	.37
SD	.10	.05	.02	.12	.07
Min	.23	.17	.41	.21	.12
Max	.61	.35	.49	.65	.47

Note. <sup>a</sup>There is no distinction between Biology BCR and ECR items; these Biology items are considered to be the same (CR). All Biology CR items are included in this table.

Table 6. Distribution of Mean Percent of Total Possible Number of Points for Extended Constructed-Response Items

Mean of Percent Of Total Possible Points	Algebra (% of items)	Biology <sup>a</sup> (% of items)	English (% of items)	Geometry (% of items)	Government (% of items)
>.80	0	-	0	0	0
.71 - .80	0	-	0	0	0
.61 - .70	6	-	0	8	0
.51 - .60	18	-	60	15	0
.41 - .50	18	-	40	23	0
.30 - .40	29	-	0	46	67
<.30	24	-	0	8	0
Not Scored	6	-	0	0	33
Number of Points Possible per Item	4	-	6	4	4
Total Number of Scored Items	16	-	5	13	2
Mean	.39	-	.51	.41	.33
SD	.14	-	.02	.11	.01
Min	.21	-	.49	.25	.32
Max	.66	-	.53	.65	.34

Note. <sup>a</sup>There is no distinction between Biology BCR and ECR items; these Biology items are considered to be the same (CR). All Biology CR items are included in Table 5.

Table 7. Percent Distributions of Item-Total Correlations for Selected-Response Items

Correlation	Algebra (% of items)	Biology (% of items)	English (% of items)	Geometry (% of items)	Government (% of items)
>.54	1	0	2	3	3
.45 - .54	18	18	29	13	18
.35 - .44	33	40	35	34	30
.25 - .34	28	19	21	30	25
.15 - .24	16	14	8	8	14
<.15	5	9	5	11	9
Not Scored	0	0	0	0	0
N of Scored Items	221	237	314	90	197
Mean	.34	.33	.38	.34	.33
SD	.11	.12	.12	.12	.13
Min	-.08	-.02	-.08	-.01	-.13
Max	.55	.54	.60	.57	.57

Table 8. Percent Distributions of Item-Total Correlations for Student Produced Response Items

Correlation	Algebra (% of items)	Geometry (% of items)
>.54	7	41
.45 - .54	28	41
.35 - .44	42	9
.25 - .34	21	7
.15 - .24	2	2
<.15	0	0
Not Scored	0	0
N of Scored Items	43	46
Mean	.41	.51
SD	.09	.10
Min	.19	.21
Max	.56	.65

Table 9. Distributions of Item-Total Correlations for Brief Constructed-Response Items

Correlation	Algebra (% of items)	Biology <sup>a</sup> (% of items)	English (% of items)	Geometry (% of items)	Government (% of items)
>.54	29	50	67	67	72
.45 - .54	45	36	20	27	24
.35 - .44	19	0	0	7	3
.25 - .34	0	0	0	0	0
.15 - .24	0	0	0	0	0
<.15	0	0	0	0	0
Not Scored	6	14	13	0	0
N of Scored Items	29	31	13	15	29
Mean	.51	.55	.59	.58	.58
SD	.07	.05	.04	.06	.06
Min	.37	.45	.53	.44	.38
Max	.62	.63	.67	.68	.69

Note. <sup>a</sup>There is no distinction between Biology BCR and ECR items; these Biology items are considered to be the same (CR).

All Biology CR items are included in this table.

Table 10. Distributions of Item-Total Correlations for Extended Constructed-Response Items

Correlation	Algebra (% of items)	Biology <sup>a</sup> (% of items)	English (% of items)	Geometry (% of items)	Government (% of items)
>.54	53	-	40	77	67
.45 - .54	41	-	60	23	0
.35 - .44	0	-	0	0	0
.25 - .34	0	-	0	0	0
.15 - .24	0	-	0	0	0
<.15	0	-	0	0	0
Not Scored	6	-	0	0	33
N of Scored Items	16	-	5	13	2
Mean	.57	-	.54	.62	.65
SD	.06	-	.03	.08	.04
Min	.48	-	.50	.50	.62
Max	.67	-	.57	.75	.67

Note. <sup>a</sup>There is no distinction between Biology BCR and ECR items; these Biology items are considered to be the same (CR). All Biology CR items are included in Table 9.

Table 11. Number of Items Flagged for DIF Against the Group using Mantel Haenszel (SR/SPR items) and Mantel (CR items) Procedures<sup>a</sup>

		African American	Asian	Hispanic	Female	Male	Number of Flagged Items <sup>b</sup>	Total Number Of Dif Items Flagged
Algebra	SR	1	-	1	3	-	5	5
	SPR	-	-	-	-	-	-	-
	BCR	-	-	-	-	-	-	-
	ECR	-	-	-	-	-	-	-
Biology	SR	-	1	1	-	-	1	2
	CR	-	-	-	-	-	-	-
English	SR	-	2	-	-	-	2	2
	BCR	-	-	-	-	-	-	-
	ECR	-	-	-	-	-	-	-
Geometry	SR	-	-	-	-	-	-	-
	SPR	-	-	-	-	-	-	-
	BCR	-	-	-	-	-	-	-
	ECR	-	-	-	-	-	-	-
Government	SR	-	-	-	1	-	1	1
	BCR	-	-	-	-	-	-	-
	ECR	-	-	-	-	-	-	-

Note. <sup>a</sup>The minimum focal group sample size used was 200 for SR items and 500 for CR items. CR items were flagged if Mantel  $\chi^2 > 0$  ( $p < .05$ ) &  $SMD \geq 0.25$ , where  $SMD = \text{mean difference} / \text{total standard deviation}$ .

<sup>b</sup>If an item was flagged for DIF against more than one focal group the item was included only once in this column total.

Table 12. Summary Statistics for Total Raw Score Distributions and Test Reliability

	N Students	Total Possible Score	Mean Score*	SD	Raw Scores At These Percentiles					Reliability	SEM
					5 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	95 <sup>th</sup>		
Algebra											
Form L	8896	82	39.9	16.1	13	28	40	52	66	0.94	4.1
Form M	8746	98	43.2	19.1	17	28	40	57	78	0.94	4.7
Form N	8586	85	32.3	14.6	12	21	30	42	60	0.91	4.3
Form P	8421	98	43.9	18.1	17	29	43	58	75	0.94	4.4
Form Q	8235	89	39.7	16.8	14	26	39	52	68	0.93	4.4
Form R	8086	89	36.4	16.9	12	23	35	49	66	0.93	4.5
Biology											
Form J	8569	95	37.5	15.6	15	25	36	48	65	0.93	4.0
Form L	8373	102	47.2	17.8	21	33	46	60	77	0.94	4.2
Form M	8139	90	36.6	14.0	15	26	36	47	60	0.93	3.8
Form N	7889	90	35.5	14.6	14	24	34	46	61	0.93	3.9
Form P	7659	86	33.5	13.3	14	23	33	43	57	0.91	3.9
English											
Form K	7878	80	44.4	15.6	18	32	46	57	68	0.93	4.1
Form M	7717	87	48.4	16.1	21	36	50	61	72	0.93	4.2
Form N	7531	79	43.3	14.9	18	32	45	55	65	0.93	3.9
Form P	7397	80	43.8	15.7	17	31	45	57	66	0.94	4.0
Form Q	7224	86	47.9	16.7	19	35	50	62	72	0.94	4.1
Form R	6971	76	40.8	14.1	17	30	42	52	62	0.92	3.9
Geometry											
Form N	7800	83	35.2	18.7	10	19	32	50	68	0.94	4.4
Form Q	7477	99	40.7	20.6	13	23	38	56	78	0.95	4.8
Form R	7216	78	30.1	17.0	8	15	27	43	61	0.93	4.4
Form S	7263	69	26.6	14.2	7	15	24	36	53	0.92	4.0
Government											
Form K	11446	108	51.8	19.3	21	36	51	67	83	0.95	4.5
Form M	11146	108	46.1	17.9	20	32	45	59	77	0.94	4.5
Form N	10929	108	49.0	18.0	20	35	49	63	78	0.94	4.4
Form P	10412	104	48.7	16.3	22	36	49	61	75	0.93	4.2

Note. \*Mean scores generally are lower than expected due, in part, to high item omit rates.

Table 13. Summary of Test Completion Rates.

	Percent Who Answered All Items	Percent Who Answered All SR and SPR Items	Percent Who Answered These Numbers of BCR Items											Percent Who Answered These Numbers of ECR Items					
			0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5
<b>Algebra</b>																			
Form I	0	48	7	4	5	8	12	19	44	-	-	-	-	4	18	23	55	-	-
Form M	1	58	10	9	12	19	17	33	-	-	-	-	-	12	26	21	41	-	-
Form N	2	37	9	10	16	26	39	-	-	-	-	-	-	11	13	18	20	37	-
Form P	8	49	12	11	9	14	16	38	-	-	-	-	-	16	16	28	40	-	-
Form Q	3	51	6	7	7	7	9	15	22	28	-	-	-	16	16	24	44	-	-
Form R	1	47	7	9	9	9	11	14	19	23	-	-	-	14	19	28	39	-	-
<b>Biology</b>																			
Form J	43	88	4	3	3	4	4	6	7	10	15	45	-	-	-	-	-	-	-
Form I	50	87	7	4	5	7	9	14	53	-	-	-	-	-	-	-	-	-	-
Form M	44	88	5	3	3	3	5	7	10	18	46	-	-	-	-	-	-	-	-
Form N	46	87	5	3	3	4	5	6	8	16	49	-	-	-	-	-	-	-	-
Form P	48	86	5	4	4	5	7	9	15	52	-	-	-	-	-	-	-	-	-
<b>English</b>																			
Form K	68	88	5	6	13	76	-	-	-	-	-	-	-	13	87	-	-	-	-
Form M	75	89	5	7	88	-	-	-	-	-	-	-	-	14	86	-	-	-	-
Form N	69	87	6	11	82	-	-	-	-	-	-	-	-	16	84	-	-	-	-
Form P	67	86	5	7	12	77	-	-	-	-	-	-	-	14	86	-	-	-	-
Form Q	67	88	8	8	11	74	-	-	-	-	-	-	-	12	88	-	-	-	-
Form R	70	89	8	14	78	-	-	-	-	-	-	-	-	11	89	-	-	-	-
<b>Geometry</b>																			
Form N	1	40	8	7	10	15	25	35	-	-	-	-	-	9	8	12	21	50	-
Form Q	0	37	5	10	12	16	25	32	-	-	-	-	-	9	8	12	20	51	-
Form R	1	41	8	6	7	11	20	48	-	-	-	-	-	9	9	14	20	49	-
Form S	1	42	5	6	9	18	62	-	-	-	-	-	-	8	8	12	19	52	-
<b>Government</b>																			
Form K	47	87	2	1	2	2	3	5	7	11	16	50	-	15	85	-	-	-	-
Form M	54	86	3	2	2	3	3	4	5	7	13	58	-	17	83	-	-	-	-
Form N	51	84	3	2	2	2	3	3	4	9	16	56	-	14	86	-	-	-	-
Form P	46	85	2	1	2	2	3	4	6	11	19	49	-	100	-	-	-	-	-