

Maryland High School Assessment
January 2002
Summary of Test Results

Table 1. Proportion of Students in Total Sample

	Algebra	Biology	English	Geometry	Government
Female	48	49	49	51	49
Male	51	50	51	48	50
African American	39	33	29	34	34
American Indian	<1	<1	<1	<1	<1
Asian	2	2	2	2	2
Hispanic	3	2	2	2	3
White	55	62	66	61	60
Other	<1	<1	<1	<1	<1
Baltimore City	18	18	18	16	17

Table 2. Number of Items in Each Test Form

	Form		SR	SPR	BCR	ECR
Algebra	S	Op	26	6	3	2
		Ft	6	2	1	2
	T	Anc	27	-	-	-
		Ft	23	6	3	3
Biology	Q	Op	48	-	7	-
		Ft	10	-	2	-
	R	Anc	26	-	-	-
		Ft	52	-	7	-
	S	Ft	58	-	9	-
	English	S	Op	50	-	2
Ft			20	-	1	-
T		Anc	28	-	-	-
		Ft	44	-	2	1
U		Ft	58	-	3	1
Geometry	T	Op	26	6	2	3
		Ft	6	2	1	1
	U	Anc	30	-	-	-
		Ft	21	6	2	3
Government	Q	Op	50	-	7	1
		Ft	24	-	1	-
	R	Anc	25	-	-	-
		Ft	49	-	8	1
	S	Ft	74	-	8	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	0	7	7	4	5
.71 - .80	7	13	12	7	10
.61 - .70	21	14	28	4	17
.51 - .60	28	25	19	15	20
.41 - .50	14	20	22	22	21
.30 - .40	17	17	7	26	19
<.30	14	4	4	22	8
Not Scored	N/A	N/A	N/A	N/A	N/A
Total Number of Items	29	120	122	27	147
Mean	0.49	0.55	0.58	0.44	0.52
SD	0.16	0.16	0.15	0.17	0.17
Min	0.21	0.17	0.26	0.21	0.17
Max	0.77	0.92	0.88	0.84	0.89

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

Mean Percent Correct	Algebra (% of items)	Geometry (% of items)
>.80	0	0
.71 - .80	0	0
.61 - .70	13	13
.51 - .60	50	13
.41 - .50	13	25
.30 - .40	25	50
<.30	0	0
Not Scored	N/A	N/A
Total Number of Scored Items	8	8
Mean	0.50	0.44
SD	0.09	0.11
Min	0.36	0.30
Max	0.61	0.67

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 ^a (% 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	0	0	0	0	0
.51 - .60	0	0	33	0	0
.41 - .50	25	6	67	33	47
.30 - .40	50	39	0	67	53
<.30	25	56	0	0	0
Not Scored	N/A	N/A	N/A	N/A	N/A
Number of Points Possible per Item	3	4	4	3	4
Total Number of Scored Items	4	18	6	3	17
Mean	0.29	0.27	0.50	0.37	0.40
SD	0.16	0.07	0.04	0.04	0.05
Min	0.07	0.14	0.43	0.34	0.32
Max	0.46	0.41	0.55	0.41	0.45

Note. ^aThere 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 ^a (% of items)	English (% of items)	Geometry (% of items)	Government (% of items)
>.80	0	-	0	0	0
.71 - .80	0	-	0	0	0
.61 - .70	0	-	50	0	0
.51 - .60	20	-	50	25	0
.41 - .50	40	-	0	25	0
.30 - .40	20	-	0	50	100
<.30	20	-	0	0	0
Not Scored	N/A	-	N/A	N/A	N/A
Number of Points Possible per Item	4	-	6	4	4
Total Number of Scored Items	5	-	2	4	2
Mean	0.38	-	0.60	0.43	0.37
SD	0.17	-	0.08	0.14	0.04
Min	0.09	-	0.54	0.30	0.34
Max	0.55	-	0.65	0.60	0.40

Note. ^aThere 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	0	1	2	0	2
.45 - .54	14	10	25	4	22
.35 - .44	17	46	33	44	31
.25 - .34	34	27	26	33	23
.15 - .24	14	8	9	7	12
<.15	21	9	5	11	10
Not Scored	N/A	N/A	N/A	N/A	N/A
N of Scored Items	29	120	122	27	147
Mean	0.28	0.34	0.36	0.33	0.34
SD	0.16	0.12	0.11	0.11	0.14
Min	-0.17	-0.03	0.04	0.10	-0.18
Max	0.53	0.56	0.56	0.54	0.58

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

Correlation	Algebra (% of items)	Geometry (% of items)
>.54	0	38
.45 - .54	25	38
.35 - .44	75	25
.25 - .34	0	0
.15 - .24	0	0
<.15	0	0
Not Scored	N/A	N/A
N of Scored Items	8	8
Mean	0.42	0.52
SD	0.05	0.09
Min	0.35	0.37
Max	0.50	0.63

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

Correlation	Algebra (% of items)	Biology ^a (% of items)	English (% of items)	Geometry (% of items)	Government (% of items)
>.54	50	83	100	33	94
.45 - .54	25	17	0	33	0
.35 - .44	0	0	0	33	6
.25 - .34	0	0	0	0	0
.15 - .24	25	0	0	0	0
<.15	0	0	0	0	0
Not Scored	N/A	N/A	N/A	N/A	N/A
N of Scored Items	4	18	6	3	17
Mean	0.47	0.62	0.63	0.53	0.61
SD	0.15	0.07	0.05	0.15	0.07
Min	0.24	0.48	0.58	0.37	0.38
Max	0.57	0.73	0.69	0.67	0.70

Note. ^aThere 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 ^a (% of items)	English (% of items)	Geometry (% of items)	Government (% of items)
>.54	60	-	100	100	100
.45 - .54	20	-	0	0	0
.35 - .44	0	-	0	0	0
.25 - .34	20	-	0	0	0
.15 - .24	0	-	0	0	0
<.15	0	-	0	0	0
Not Scored	N/A	-	N/A	N/A	N/A
N of Scored Items	5	-	2	4	2
Mean	0.52	-	0.61	0.69	0.66
SD	0.12	-	0.03	0.06	0.01
Min	0.34	-	0.59	0.60	0.65
Max	0.68	-	0.63	0.75	0.66

Note. ^aThere 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^a

		African American	Asian	Hispanic	Female	Male	Number of Flagged Items ^b	Total Number Of DIF Items Flagged
Algebra	SR	1	-	-	3	-	4	4
	SPR	-	-	-	-	-	-	-
	BCR	-	-	-	-	-	-	-
	ECR	-	-	-	-	-	-	-
Biology	SR	1	-	-	4	-	5	5
	CR	-	-	-	-	-	-	-
English	SR	2	-	-	1	-	3	3
	BCR	-	-	-	-	-	-	-
	ECR	-	-	-	-	-	-	-
Geometry	SR	-	-	-	1	-	1	1
	SPR	1	-	-	-	-	1	1
	BCR	-	-	-	-	-	-	-
	ECR	-	-	-	-	-	-	-
Government	SR	-	-	-	1	-	1	1
	BCR	-	-	-	-	-	-	-
	ECR	-	-	-	-	-	-	-

Note. ^aThe 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 ≥ 0.25 , where SMD = mean difference divided by total standard deviation.

^bIf 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 th	25 th	50 th	75 th	95 th		
Algebra											
Form S	3103	68	28.9	13.0	9	19	28	38	51	0.91	3.8
Form T	2935	77	32.2	12.8	13	23	31	41	54	0.91	3.8
Biology											
Form Q	3456	94	38.5	16.4	15	26	37	50	68	0.94	4.2
Form R	3145	80	48.9	18.4	22	35	48	62	80	0.95	4.3
Form S	3094	91	39.8	15.0	17	29	39	50	66	0.93	3.9
English											
Form S	3151	88	48.3	18.1	18	34	50	63	75	0.95	4.2
Form T	2888	86	50.0	15.0	23	40	52	61	71	0.92	4.1
Form U	2887	76	41.8	14.9	17	31	43	53	64	0.93	3.9
Geometry											
Form T	4638	65	25.5	14.0	8	14	22	36	51	0.94	3.5
Form U	4342	75	31.8	15.3	12	19	29	44	59	0.93	3.9
Government											
Form Q	3777	110	54.2	20.5	22	38	54	70	88	0.95	4.4
Form R	3472	110	51.1	18.6	23	37	50	65	82	0.94	4.4
Form S	3444	110	49.7	17.9	22	36	49	63	79	0.94	4.5

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	
Algebra																				
Form S	4	52	8	8	13	23	48	-	-	-	-	-	-	-	4	8	9	15	65	-
Form T	11	55	15	19	24	42	-	-	-	-	-	-	-	-	4	13	24	58	-	-
Biology																				
Form Q	47	85	3	3	2	3	3	5	6	10	14	52	-	-	-	-	-	-	-	-
Form R	47	82	5	3	4	5	7	10	14	52	-	-	-	-	-	-	-	-	-	-
Form S	53	81	4	2	2	2	2	4	5	7	13	58	-	-	-	-	-	-	-	-
English																				
Form S	62	82	6	11	14	69	-	-	-	-	-	-	-	-	10	90	-	-	-	-
Form T	79	90	4	8	88	-	-	-	-	-	-	-	-	-	9	91	-	-	-	-
Form U	75	89	4	4	9	83	-	-	-	-	-	-	-	-	8	92	-	-	-	-
Geometry																				
Form T	1	56	11	11	19	60	-	-	-	-	-	-	-	-	8	8	10	18	57	-
Form U	6	63	9	18	73	-	-	-	-	-	-	-	-	-	7	8	23	62	-	-
Government																				
Form Q	61	87	3	2	2	2	3	4	7	12	66	-	-	-	11	89	-	-	-	-
Form R	51	86	3	2	2	4	5	6	9	14	57	-	-	-	23	77	-	-	-	-
Form S	57	87	2	2	2	3	3	5	7	14	61	-	-	-	10	90	-	-	-	-