FOR TEACHERS ONLY

The University of the State of New York
REGENTS HIGH SCHOOL EXAMINATION

PS–ES PHYSICAL SETTING/EARTH SCIENCE

Thursday, August 16, 2001 — 12:30 to 3:30 p.m., only

SCORING KEY AND RATING GUIDE

Directions to the Teacher:

Refer to the directions on page 3 before rating student papers.

Part A and Part B–1
Allow 1 credit for each correct response.

Part A

1	1	13	2	25	1
2	3	14	4	26	2
3	1	15	3	27	1
4	2	16	1	28	2
5	4	17	2	29	4
6	1	18	2	30	2
7	3	19	1	31	4
8	2	20	4	32	3
9	1	21	3	33	4
10	3	22	4	34	3
11	4	23	3	35	1
12	3	24	3		

Part B–1

36	2	45	1
37	3	46	1
38	2	47	2
39	4	48	4
40	1	49	4
41	2	50	1
42	1	51	2
43	4	52	3
44	3		

Directions to the Teacher

Follow the procedures below for scoring student answer papers for the Physical Setting/Earth Science examination. Additional information about scoring is provided in the publication *Information Booklet for Administering and Scoring Regents Examinations in Living Environment and Physical Setting/Earth Science*.

Use only *red* ink or *red* pencil in rating Regents papers. Do *not* correct the student's work by making insertions or changes of any kind.

On the detachable answer sheet for Part A and Part B–1, indicate by means of a checkmark each incorrect or omitted answer. In the box provided at the end of each part, record the number of questions the student answered correctly for that part.

At least two science teachers must participate in the scoring of each student's responses to the Part B–2 and Part C open-ended questions. Each of these teachers should be responsible for scoring a selected number of the open-ended questions on each answer paper. No one teacher is to score all the open-ended questions on a student's answer paper.

Students' responses must be scored strictly according to the Scoring Key and Rating Guide. For open-ended questions, credit may be allowed for responses other than those given in the rating guide if the response is a scientifically accurate answer to the question and demonstrates adequate knowledge as indicated by the examples in the rating guide. In the student's answer booklet, record the number of credits earned for each answer in the box printed to the right of the answer lines or spaces for that question.

Fractional credit is *not* allowed. Only whole-number credit may be given to a response. If the student gives more than one answer to a question, only the first answer should be rated. Units need not be given when the wording of the questions allows such omissions.

Raters should enter the scores earned for Part A, Part B–1, Part B–2, and Part C on the appropriate lines in the box printed on the answer booklet and then should add these four scores and enter the total in the box labeled "Total Written Test Score." The student's score for the Earth Science Performance Test should be entered in the space provided. Then, the student's raw scores on the performance test and written test should be converted to a scaled score by using the conversion chart printed at the end of this Scoring Key and Rating Guide. The student's scaled score should be entered in the labeled box on the student's answer booklet. The scaled score is the student's final examination score.

All student answer papers that receive a scaled score of 60 through 64 **must** be scored a second time. For the second scoring, a different committee of teachers may score the student's paper or the original committee may score the paper, except that no teacher may score the same open-ended questions that he/she scored in the first rating of the paper. The school principal is responsible for assuring that the student's final examination score is based on a fair, accurate, and reliable scoring of the student's answer paper.

Because scaled scores corresponding to raw scores in the conversion chart may change from one examination to another, it is crucial that for each administration, the conversion chart provided in the scoring key for that administration be used to determine the student's final score. The chart in this scoring key is usable only for this administration of the examination.

Part B–2

Allow a total of 13 credits for this part. The student must answer all questions in this part.

53 [2] ***a*** Allow 1 credit for **June**.

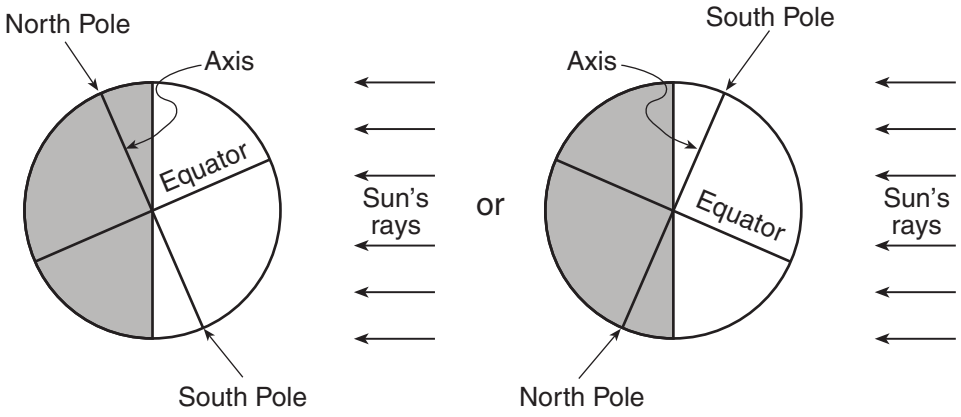
b Allow 1 credit for **23 $\frac{1}{2}$° N** or **Tropic of Cancer**.

54 [1] Allow 1 credit for a correct response. Accept student responses that indicate that *A* is longer than *B*, even if the specific length of the day, in hours, is stated incorrectly. Acceptable responses include, but are not limited to, these examples:

There are more daylight hours at *A* than at *B*.

A is longer.

55 [3]



Allow a maximum of 3 credits:

Allow 1 credit if the north end of the axis is tilted away from the Sun (approximately 23 $\frac{1}{2}$°).

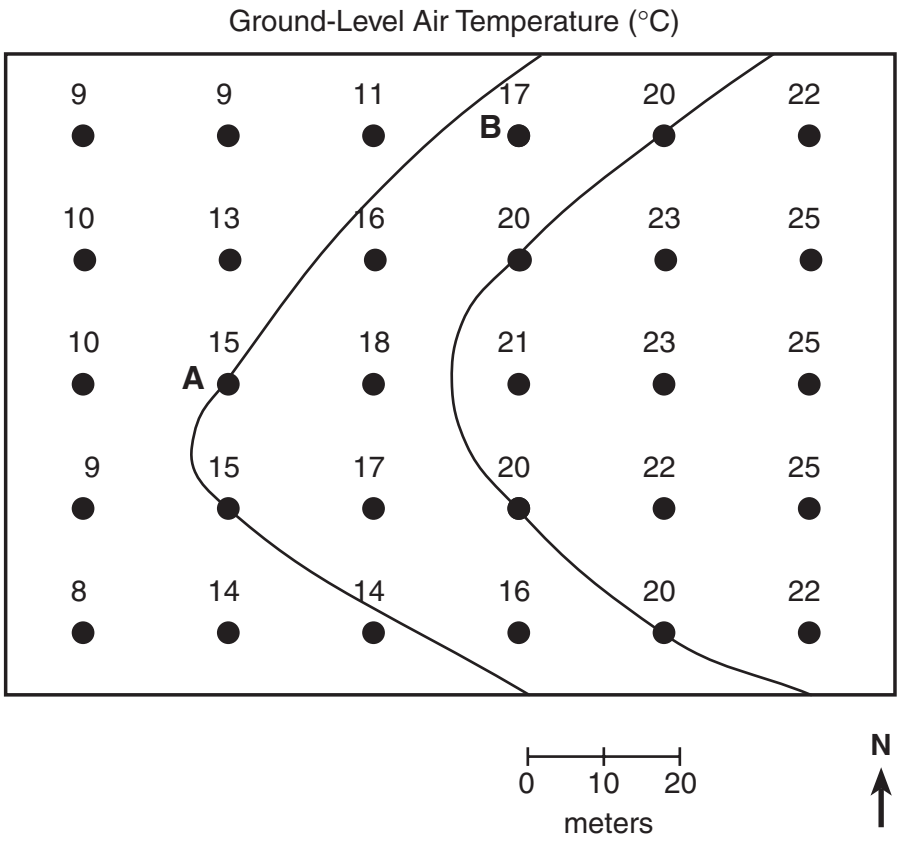
and

Allow 1 credit if the North Pole is appropriately labeled, based on the student's drawn axis.

and

Allow 1 credit if the Equator is correctly drawn or is drawn perpendicular to the axis in the student's answer.

56 [2]



Allow a maximum of 2 credits if both required isotherms are drawn correctly and touch the borders of the map. If more than the two required isotherms are drawn, *all* isotherms must be correct for 2 credits. Isotherms need *not* be labeled.

Allow only 1 credit if both required isotherms are plotted correctly but do not touch the borders of the map.

or

Allow only 1 credit if only one required isotherm is drawn correctly.

or

Allow only 1 credit if more than the two required isotherms are drawn and the two *required* isotherms are drawn correctly but the additional isotherms are incorrect.

57 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

Dark surfaces are better absorbers of radiant energy.

The parking lot reflects less sunlight than the surrounding area.

The parking lot has a darker and rougher surface.

58 [3] ***a*** Allow no credit for writing the equation.

b Allow 1 credit for correctly substituting both acceptable measurements into the equation given in part *a*. The student need *not* record the units. Allow ±5 m for distance; temperature must be 2°. Acceptable responses include, but are not limited to, this example:

gradient = $\frac{2\ \text{C}^\circ}{50\ \text{m}}$ or $\frac{2}{50}$

c Allow a maximum of 2 credits:

Allow 1 credit for correctly calculating the gradient, based on the student's answer in part *b*.

and

Allow 1 credit for recording the proper units, based on the student's answer in part *b*.

Acceptable responses include, but are not limited to, these examples:

gradient = 0.04 C°/m or 0.04°C/m

g = .04 C°/m or .04°C/m

59 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

The angle of insolation or intensity of sunlight normally increases between 10 a.m. and noon.

The area continues to absorb more energy than it radiates.

Part C

Allow a total of 20 credits for this part. The student must answer all questions in this part.

60 [2] ***a*** Allow 1 credit for **glaciers** or **ice**.

b Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

Unsorted sediments are different from the bedrock.

parallel scratches in the bedrock

61 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

Rocks were abraded by tumbling.

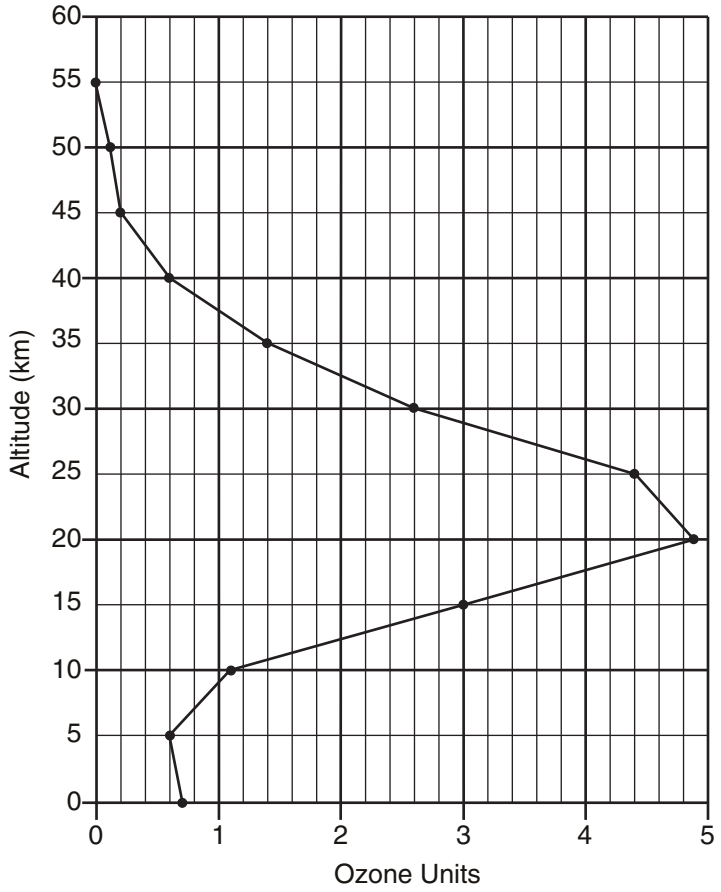
Sediments rolled along the streambed.

62 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

When liquid water freezes, it expands and breaks off pieces of rock.

frost action

63 [3]



Allow a maximum of 3 credits:

Allow 2 credits if eleven or twelve points are plotted correctly (±0.1 ozone unit).

Allow only 1 credit if only six to ten points are plotted correctly (±0.1 ozone unit).

and

Allow 1 credit for correctly connecting all the plotted points.

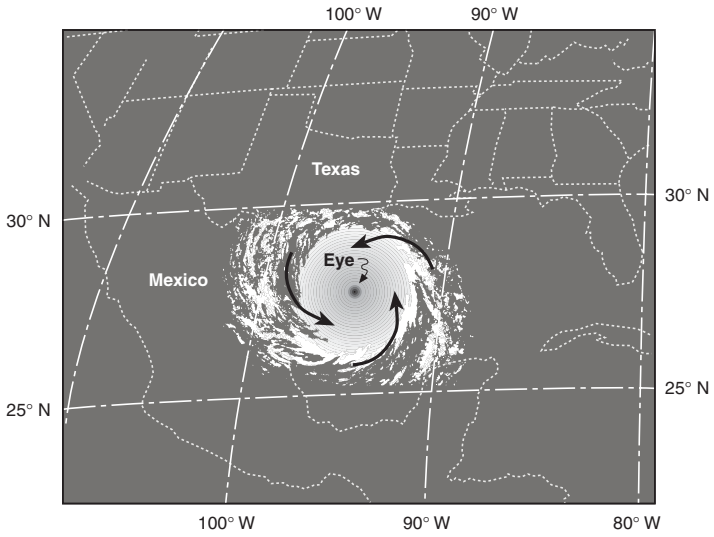
64 [1] Allow 1 credit for **stratosphere**.

65 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

Some insolation is absorbed by the ozone.

Harmful UV radiation is absorbed by ozone.

66 [1] Allow 1 credit for arrows showing a counterclockwise direction. Arrows showing a counterclockwise and outward direction are *not* acceptable. Acceptable responses include, but are not limited to, this example:



67 [1] Allow 1 credit for a correct and complete response. Acceptable responses include, but are not limited to, these examples:

Rising air cools to the dewpoint and water vapor condenses.

Condensation occurs when the dewpoint is reached.

68 [1] Allow 1 credit for **27°30' N** or **27.5° N** (± 1°) and **95° W** (± 1°). The student's answer must include N and W.

69 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

Over land there is less energy from evaporating water.

Winds decrease in strength due to friction with the land.

70 [3] ***a*** Allow a maximum of 2 credits, 1 credit for each of two dangerous conditions. Acceptable responses include, but are not limited to, these examples:

flooding and tornadoes

storm surge and collapsing structures

hail and lightning

downed electrical wires and flying debris

b Allow 1 credit for a correct response. The response must be an emergency preparation that can be taken prior to the approaching hurricane hitting the area. Acceptable responses include, but are not limited to, these examples:

Evacuate to a higher elevation.

Take shelter.

Board up windows.

Build a seawall.

71 [3] Allow a maximum of 3 credits, 1 credit each for:

Rock *A* — **shale**

Rock *B* — **gneiss**

Rock *C* — **granite** or **diorite** or **pegmatite**

72 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

heat and/or pressure

The rock is buried deep underground.

plate collisions

mountain building

Regents Examination in Physical Setting/Earth Science —August 2001
Chart for Determining the Final Examination Score
(Use for August 2001 examination only.)

To determine the student's final examination score, locate the student's total performance test score across the top of the chart and the student's total written test core down the side of the chart. The point where those two scores intersect is the student's final examination score. For example, a student receiving a total performance test score of 14 and a total written test score of 68 would receive a final examination score of 82.

Total Performance Test Score

Total Written Test Score

	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
85	100	99	98	97	97	97	97	96	96	95	95	94	94	93	92	92	91	90	90	89	88	87	86	85
84	99	98	97	97	96	96	96	95	95	95	94	93	93	92	92	91	90	90	89	88	87	86	85	84
83	99	98	96	96	96	95	95	95	94	94	93	93	92	92	91	90	90	89	88	87	86	86	85	84
82	98	97	96	95	95	95	94	94	94	93	93	92	92	91	90	90	89	88	87	87	86	85	84	83
81	97	96	95	95	94	94	94	93	93	92	92	91	91	90	90	89	88	87	87	86	85	84	83	82
80	97	95	94	94	94	93	93	93	92	92	91	91	90	90	89	88	88	87	86	85	84	83	82	82
79	96	95	94	93	93	93	92	92	91	91	91	90	89	89	88	88	87	86	85	84	84	83	82	81
78	95	94	93	92	92	92	92	91	91	90	90	89	89	88	87	87	86	85	85	84	83	82	81	80
77	94	93	92	92	91	91	91	90	90	90	89	88	88	87	87	86	85	85	84	83	82	81	80	79
76	94	93	91	91	91	90	90	90	89	89	88	88	87	87	86	85	85	84	83	82	81	81	79	79
75	93	92	91	90	90	90	89	89	88	88	88	87	86	86	85	85	84	83	82	81	81	80	79	78
74	92	91	90	89	89	89	89	88	88	87	87	86	86	85	84	84	83	82	82	81	80	79	78	77
73	91	90	89	89	88	88	89	87	87	86	86	85	85	84	84	83	82	82	81	80	79	78	77	76
72	90	89	88	88	88	87	87	87	86	86	85	85	84	84	83	82	81	81	80	79	78	77	76	75
71	90	89	87	87	87	87	86	86	85	85	84	84	83	83	82	81	81	80	79	78	78	77	76	75
70	89	88	87	86	86	86	85	85	85	84	84	83	83	82	81	81	80	79	78	77	77	76	75	74
69	88	87	86	86	85	85	85	84	84	83	83	82	82	81	80	80	79	78	78	77	76	75	74	73
68	87	86	85	85	84	84	84	83	83	82	82	81	81	80	80	79	78	78	77	76	75	74	73	72
67	86	85	84	84	84	83	83	83	82	82	81	81	80	80	79	78	77	77	76	75	74	73	72	71
66	86	85	83	83	83	82	82	82	81	81	80	80	79	79	78	77	77	76	75	74	73	73	71	71
65	85	84	83	82	82	82	81	81	80	80	80	79	78	78	77	77	76	75	74	73	73	72	71	70
64	84	83	82	81	81	81	80	80	80	79	79	78	78	77	76	76	75	74	73	73	72	71	70	69
63	83	82	81	81	80	80	80	79	79	78	78	77	77	76	75	75	74	73	73	72	71	70	69	68
62	82	81	80	80	79	79	79	78	78	77	77	76	76	75	75	74	73	72	72	71	70	69	68	67
61	81	80	79	79	78	78	78	77	77	77	76	75	75	74	74	73	72	72	71	70	69	68	67	66
60	80	79	78	78	78	77	77	77	76	76	75	75	74	74	73	72	71	71	70	69	68	67	66	65
59	80	78	77	77	77	76	76	76	75	75	74	74	73	73	72	71	71	70	69	68	67	66	65	65
58	79	78	76	76	76	75	75	75	74	74	73	73	72	72	71	70	70	69	68	67	66	66	65	64
57	78	77	75	75	75	75	74	74	73	73	72	72	71	71	70	69	69	68	67	66	66	65	64	63
56	77	76	75	74	74	74	73	73	72	72	72	71	71	70	69	69	68	67	66	65	65	64	63	62
55	76	75	74	73	73	73	72	72	72	71	71	70	70	69	68	68	67	66	65	65	64	63	62	61
54	75	74	73	72	72	72	72	71	71	70	70	69	69	68	67	67	66	65	64	64	63	62	61	60
53	74	73	72	72	71	71	71	70	70	69	69	68	68	67	66	66	65	64	64	63	62	61	60	59
52	73	72	71	71	70	70	70	69	69	68	68	67	67	66	65	65	64	63	63	62	61	60	59	58
51	72	71	70	70	69	69	69	68	68	67	67	66	66	65	65	64	63	62	62	61	60	59	58	57
50	71	70	69	69	68	68	68	67	67	66	66	65	65	64	64	63	62	61	61	60	59	58	57	56
49	70	69	68	68	67	67	67	66	66	65	65	64	64	63	63	62	61	61	60	59	58	57	56	55
48	69	68	67	67	66	66	66	65	65	64	64	63	63	62	62	61	60	60	59	58	57	56	55	54
47	68	67	66	66	65	65	65	64	64	64	63	62	62	61	61	60	59	59	58	57	56	55	54	53
46	67	66	65	65	64	64	64	63	63	63	62	61	61	60	60	59	58	58	57	56	55	54	53	52
45	66	65	64	64	63	63	63	62	62	62	61	60	60	59	59	58	57	57	56	55	54	53	52	51
44	65	64	63	63	62	62	62	61	61	61	60	59	59	58	58	57	56	56	55	54	53	52	51	50
43	64	63	62	62	61	61	61	60	60	60	59	58	58	57	57	56	55	55	54	53	52	51	50	49

Regents Examination in Physical Setting/Earth Science —August 2001
Chart for Determining the Final Examination Score
(Use for August 2001 examination only.)

Total Performance Test Score

Total Written Test Score

	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
42	63	62	61	61	60	60	60	59	59	59	58	57	57	56	56	55	54	54	53	52	51	50	49	48
41	62	61	60	60	59	59	59	58	58	57	57	56	56	55	55	54	53	53	52	51	50	49	48	47
40	61	60	59	59	58	58	58	57	57	56	56	55	55	54	54	53	52	52	51	50	49	48	47	46
39	60	59	58	58	57	57	57	56	56	55	55	54	54	53	53	52	51	50	50	49	48	47	46	45
38	59	58	57	57	56	56	56	55	55	54	54	53	53	52	52	51	50	49	49	48	47	46	45	44
37	58	57	56	56	55	55	55	54	54	53	53	52	52	51	50	50	49	48	48	47	46	45	44	43
36	57	56	55	55	54	54	54	53	53	52	52	51	51	50	49	49	48	47	47	46	45	44	43	42
35	56	55	54	53	53	53	53	52	52	51	51	50	50	49	48	48	47	46	46	45	44	43	42	41
34	55	54	53	52	52	52	52	51	51	50	50	49	49	48	47	47	46	45	44	44	43	42	41	40
33	54	53	52	51	51	51	50	50	50	49	49	48	48	47	46	46	45	44	43	42	42	41	40	39
32	53	52	51	50	50	50	49	49	48	48	48	47	47	46	45	45	44	43	42	41	41	40	39	38
31	52	51	49	49	49	49	48	48	47	47	46	46	45	45	44	43	43	42	41	40	40	39	38	37
30	51	50	48	48	48	47	47	47	46	46	45	45	44	44	43	42	42	41	40	39	38	38	37	36
29	50	48	47	47	47	46	46	46	45	45	44	44	43	43	42	41	41	40	39	38	37	36	35	35
28	48	47	46	46	46	45	45	45	44	44	43	43	42	42	41	40	39	39	38	37	36	35	34	33
27	47	46	45	45	44	44	44	43	43	43	42	41	41	40	40	39	38	38	37	36	35	34	33	32
26	46	45	44	44	43	43	43	42	42	41	41	40	40	39	39	38	37	36	36	35	34	33	32	31
25	45	44	43	43	42	42	42	41	41	40	40	39	39	38	37	37	36	35	35	34	33	32	31	30
24	44	43	42	41	41	41	40	40	40	39	39	38	38	37	36	36	35	34	33	33	32	31	30	29
23	43	42	41	40	40	40	39	39	38	38	38	37	36	36	35	35	34	33	32	31	31	30	29	28
22	42	41	39	39	39	38	38	38	37	37	36	36	35	35	34	33	33	32	31	30	29	29	28	27
21	41	39	38	38	38	37	37	37	36	36	35	35	34	34	33	32	32	31	30	29	28	27	26	26
20	39	38	37	37	36	36	36	35	35	35	34	33	33	32	32	31	30	30	29	28	27	26	25	24
19	38	37	36	36	35	35	35	34	34	33	33	32	32	31	31	30	29	28	28	27	26	25	24	23
18	37	36	35	34	34	34	34	33	33	32	32	31	31	30	29	29	28	27	27	26	25	24	23	22
17	36	35	34	33	33	33	32	32	31	31	31	30	30	29	28	28	27	26	25	24	24	23	22	21
16	35	34	32	32	32	32	31	31	30	30	29	29	28	28	27	26	26	25	24	23	23	22	21	20
15	33	32	31	31	31	30	30	30	29	29	28	28	27	27	26	25	24	24	23	22	21	20	19	18
14	32	31	30	30	29	29	29	28	28	27	27	26	26	25	25	24	23	23	22	21	20	19	18	17
13	31	30	29	29	28	28	28	27	27	26	26	25	25	24	23	23	22	21	21	20	19	18	17	16
12	30	29	28	27	27	27	26	26	26	25	25	24	24	23	22	22	21	20	19	18	18	17	16	15
11	29	28	26	26	26	26	25	25	24	24	23	23	22	22	21	20	20	19	18	17	17	16	15	14
10	27	26	25	25	25	24	24	24	23	23	22	22	21	21	20	19	18	18	17	16	15	14	13	12
9	26	25	24	24	23	23	23	22	22	21	21	20	20	19	19	18	17	16	16	15	14	13	12	11
8	25	24	23	22	22	22	22	21	21	20	20	19	19	18	17	17	16	15	15	14	13	12	11	10
7	24	23	22	21	21	21	20	20	19	19	19	18	17	17	16	16	15	14	13	12	12	11	10	9
6	23	21	20	20	20	19	19	19	18	18	17	17	16	16	15	14	14	13	12	11	10	9	8	8
5	21	20	19	19	18	18	18	17	17	16	16	15	15	14	14	13	12	12	11	10	9	8	7	6
4	20	19	18	17	17	17	17	16	16	15	15	14	14	13	12	12	11	10	10	9	8	7	6	5
3	19	18	17	16	16	16	15	15	14	14	14	13	12	12	11	11	10	9	8	7	7	6	5	4
2	18	16	15	15	15	14	14	14	13	13	12	12	11	11	10	9	9	8	7	6	5	4	3	3
1	16	15	14	14	13	13	13	12	12	11	11	10	10	9	9	8	7	7	6	5	4	3	2	1
0	15	14	13	12	12	12	12	11	11	10	10	9	9	8	7	7	6	5	5	4	3	2	1	0

Map to Core Curriculum

August 2001 Physical Setting/Earth Science			
	Question Numbers		
Key Ideas	Part A	Part B	Part C
Standard 1			
Math Key Idea 1	2	58a,58b,58c	63,67
Math Key Idea 2	20		65
Math Key Idea 3	8	37, 52,56,57,58c	
Sci. Inq Key Idea 1	27,35	47, 59	60a,61,62
Sci. Inq Key Idea 2			60b,69
Sci. Inq Key Idea 3		49, 53b	71,72
Eng. Des.Key Idea1			
Standard 2			
Key Idea1	24		
Key Idea 2			
Key Idea 3			66,
Standard 6			
Key Idea1		47	
Key Idea 2	1,22	36,37,45, 50,53a,53b,54,55,56	
Key Idea 3	13,23	38,56	68
Key Idea 4			
Key Idea 5	1, 8,11,19,24	40, 45, 48,59	64
Key Idea 6			
Standard 7			
Key Idea1		51	
Key Idea 2			70a,70b
Standard 4			
Key Idea1	3,4,5,6,14,15,18,19, 23,25,26,28,30, 32,33,34	44, 45, 49, 53a,53b,54,55 Intro, 3, 51	68
Key Idea 2	7,8,9,10,11,17,20,21 22,24,35	36,39,40,41,42,43,46, 47,48,52,54,56,57 58a,58b,58c,59	60a,60b,61,62,63 64,65,66,69,70a,70b, 71,72
Key Idea 3	12,16,29,31,32	50	71,72
Reference Tables			
ESRT 2001 edition	2,3,4,5,7,9,10,12, 13,18,21,23,24,29, 30,32,33	39,41,42,43,44,46,48, 52,58a,58b,58c	64,71,72