THE UNIVERSITY OF THE STATE OF NEW YORK

GRADE 4

ELEMENTARY-LEVEL SCIENCE TEST

MAY 2004

FOR TEACHERS ONLY

RATING GUIDE FOR WRITTEN TEST, PART II

This rating guide contains detailed directions for rating student responses to Part II of the written test in Elementary-Level Science. All raters should become familiar with the detailed directions before beginning to rate student responses.

Appendix A provides two charts. The performance levels chart translates final scores into four performance levels. The conversion chart translates a student's raw scores on the written and performance tests to a final score.

Appendix B provides three charts that link the individual questions on the test to the *Elementary-Level Science Core Curriculum K-4*. This core curriculum is based on the *New York State Learning Standards in Mathematics, Science, and Technology*.

Any clarifications or changes to this rating guide will be posted on the NYS Education Department website at http://www.emsc.nysed.gov/osa/ at the end of the May test administration period. Check this web page before starting the scoring process and and several times during the scoring period.

Questions regarding this test should be directed to Ann Crotty in the Office of Curriculum, Instruction, and Instructional Technology at (518) 474-5922.

Note: Retain this rating guide for future use. Do not return it to SED.

Detailed Directions for Rating Part II of the Written Test

This guide contains detailed directions and criteria for rating student responses to the questions in Part II of the written test. Raters should become familiar with the detailed directions and rating criteria before beginning to rate the student responses. Refer to the 2004 Manual for Administrators and Teachers pages 14-17 for suggestions about organizing the rating process.

In rating the student responses, follow the procedure outlined below.

1. Familiarize yourself with the system your school is using for processing the answer papers and recording the student scores. For example, scores may be transferred to each student's scannable answer sheet or to the Class Record Sheet.

2. Have a test booklet on hand. Read each Part II question carefully. Note exactly what is required.

3. Carefully read the criteria provided in this guide for rating each question. Look at the sample responses for each point value.

   Note: These samples represent actual student responses that have been transcribed.

4. When answers appear in **bold**, allow credit for <u>only</u> those answers. In other cases, examples of correct answers are provided. Correct answers include, but are not limited to, these answers. Other responses that convey the same general meaning as those given in this guide should also receive credit. Raters must use their judgement to decide if the student's answer meets the criteria. You may find it helpful to discuss questionable student responses with other raters.

5. Discuss with other raters the requirements of each question and the rating criteria. When you are certain that you clearly understand the requirements and criteria, you are ready to begin rating the student responses.

6. It is recommended that you rate all the student responses to one question or group of questions before proceeding to the next question or group of questions. This method helps ensure that the rating criteria are applied consistently.

7. Students should *not* lose credit for incorrect spelling, grammar, capitalization, or punctuation.

8. In responses to questions where a specific number of answers are required (e.g., identify three materials, give two examples), if the student provides more than the required number of answers, score only the required number, in the order in which they appear.

9. Record the number of credits you allow for each question in the table provided on the back cover of the test booklet. The maximum number of credits for each question appears in the table.

10. When you have finished rating all the Part II questions, add the credits allowed for each question to obtain the total raw score for Part II.

11. The total raw score for Part II can be transferred to the student's scannable answer sheet. Check to be certain that the student name on the test booklet matches the name on the answer sheet. Scores may also be transferred to the Class Record Sheet if your school uses it.

    Note: Some schools will transfer a score for each Part II question rather than a total raw score for Part II. These are local decisions that depend on the answer sheet your school uses.

12. Add the student's raw score for Part II to the raw score for Part I to determine the student's total raw score for the written test. Use the conversion chart in Appendix A to convert the written and performance test raw scores to a final score for the student.

31 [1] Allow 1 credit for **orange juice** *or* **juice** *or* **o.j.**.

32 [1] Allow 1 credit for a correct reason to include calcium in a healthy diet.

Correct answers include:
— helps our bodies grow strong bones
— It builds strong teeth.
— to get the right nutrients
— It helps us to grow.

Note: Do *not* allow credit for "to be healthy," since this is stated in the question.

Do *not* allow credit for general statements like "it is good for you."

33 [1] Allow 1 credit for **two** *or* **2** *or* **twice**.

34 [2] Allow a maximum of 2 credits, 1 for each factor that might have caused a decrease in the deer population.

Correct answers include:
— not enough food/not enough plants
— Some deer were not able to find proper shelter.
— There was an increase in predators.
— Some deer were not able to find enough water.
— bad weather
— There was an increase in hunting.
— disease
— The habitat was destroyed or damaged (flood, fire, humans, etc.).
— hit by cars
— pollution
— Some of the deer moved away.
— There was construction in the area.
— There were too many deer and they had to compete for food.
— The deer didn't reproduce.

Incorrect answers include:
— The deer died.

35 [2] *a* Allow 1 credit for correctly explaining why some birds migrate.

Correct answers include:
— Birds migrate because they are unable to find food in cold climates.
— Birds migrate to go to their breeding grounds.
— It is too cold here.
— instinct

b Allow 1 credit for a correct description of another way that animals adapt to seasonal changes.

Correct answers include:
— a snowshoe hare changing its color in the winter
— shedding their fur in spring
— growing more fur in the winter
— Squirrels store nuts for the winter.
— Bears/skunks/reptiles hibernate in the winter.
— birds changing feather color during mating season
— Humans wear warmer clothes in the winter.
— Some animals eat another kind of food in the winter.
— gain weight/get fat/get bigger
— hibernate
— store food

Note: Do *not* accept flying south since it was given in part *a*.
A specific animal name is *not* needed for an answer to be correct.

Incorrect answers include:
— They get used to the weather. (This simply restates the question.)

36 [1] Allow 1 credit for correctly identifying *two* living organisms in the diagram. Do *not* allow credit for only one correct answer.

Correct answers include:
— fish
— plants/green plant
— snail

37 [1] Allow 1 credit for correctly identifying *two* nonliving objects in the diagram. Do *not* allow credit for only one correct answer.

Correct answers include:
— rock
— castle
— air pump
— sunlight
— gravel
— water

38 [1] Allow 1 credit for **oak tree** *or* **tree**.

39 [1] Allow 1 credit for **mouse**.

40 [1] Allow 1 credit for correctly explaining how the nutrients from the mouse go back to the food chain.

Correct answers include:
— The body will rot and be reused.
— The mouse will decompose.
— The mouse will be eaten by another animal.
— It will disintegrate into the soil.
— mouse decays

41 [2] *a* Allow 1 credit for describing one positive way the organisms living in the area have been affected by the changes shown in the diagrams.

Correct answers include:
— More people have housing.
— Animals have food from the feeders.
— They built apartments so people could live there.
— put up feeders for animals
— backed up the stream and made a pond for the fish

b Allow 1 credit for describing one *negative* way the organisms living in the area have been affected by the changes shown in the diagrams.

Correct answers include:
— A wetland where plants/animals lived was destroyed.
— loss of habitat for plants/animals
— There will be more people and that will scare off animals.
— People sometimes have cats and dogs, which are predators of some wildlife.
— cut down trees where animals lived
— cut down trees that give people oxygen
— fewer trees for birds and squirrels to build their nests
— There will be less oxygen for people because the trees were cut down.
— Food sources changed.

Note: Correct answers must include a reference to organisms. Simple observations based on the diagrams should *not* receive credit. For example: trees were cut down, houses were built.

Appendix A

New York State Grade 4 Elementary-Level Science Test
May 2004

Performance Levels Chart
Conversion Chart for Determining a Student's Final Test Score

Note: Use for May 2004 test only.

The chart on the next page defines the four performance levels for this test. The state-designated level of performance for this test is a final score of 65 or higher (level 3 and 4). Students scoring below 65 (levels 1 and 2) must be provided with academic intervention services according to section 100.2(ee)(i) of the Regulations of the Commissioner of Education. The chart provides the score range and a brief description of student performance for each level.

The conversion chart is presented on the page following the performance levels chart. To determine the student's final test score, locate the student's raw score for the performance test across the top of the chart and the student's raw score for the written test down the left side of the chart. The point where those two scores intersect is the student's final test score. For example, a student receiving a performance test raw score of 12 and a written test raw score of 37 would receive a final test score of 80.

Performance Levels for Final Score
Grade 4 Elementary-Level Science Test

Level	Final Test Score Range	Description of Student Performance
4	85–100	**Meeting the Standards with Distinction** • A student demonstrates superior understanding of elementary-level science content and concepts for the learning standards and key ideas being assessed. • The student demonstrates superior elementary-level science skills related to the learning standards and key ideas being assessed. • The student demonstrates superior understanding of the science content, concepts, and skills required for an elementary-level academic environment.
3	65–84	**Meeting the Standards** • The student demonstrates understanding of elementary-level science content and concepts for the learning standards and key ideas being assessed. • The student demonstrates elementary-level science skills related to the learning standards and key ideas being assessed. • The student demonstrates understanding of the science content, concepts, and skills required for an elementary-level academic environment.
2	45–64	**Not Fully Meeting the Standards** • The student demonstrates only minimal understanding of elementary-level science content and concepts for each of the learning standards and key ideas being assessed. • The student demonstrates minimal elementary-level science skills related to the learning standards and key ideas being assessed. • The student demonstrates minimal understanding of the science content, concepts, and skills required for an elementary-level academic environment.
1	0–44	**Not Meeting the Standards** • The student is unable to demonstrate understanding of elementary-level science content and concepts for the learning standards and key ideas being assessed. • The student is unable to demonstrate elementary-level science skills related to the learning standards and key ideas being assessed. • The student is unable to demonstrate understanding of the science content, concepts, and skills required for an elementary-level academic environment.

Grade 4 Elementary-Level Science Written Test 2004 – Raw Score	Grade 4 Elementary-Level Science Performance Test Form A – Raw Score																											
	26	**25**	**24**	**23**	**22**	**21**	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0**
44	100	99	98	98	97	96	96	95	95	94	94	93	92	92	91	90	90	89	88	87	85	84	83	81	79	77	75
43	98	98	97	96	95	95	94	94	93	93	92	91	91	90	90	89	88	87	86	85	84	83	81	79	78	76	73
42	97	96	95	94	94	93	93	92	91	91	90	90	89	89	88	87	86	86	85	84	82	81	79	78	76	74	72
41	95	94	94	93	92	92	91	90	90	89	89	88	88	87	86	86	85	84	83	82	81	79	78	76	74	72	70
40	94	93	92	91	91	90	89	89	88	88	87	87	86	86	85	84	83	82	81	80	79	78	76	75	73	71	69
39	92	91	90	90	89	88	88	87	87	86	86	85	85	84	83	83	82	81	80	79	78	76	75	73	71	69	67
38	91	90	89	88	87	87	86	86	85	85	84	84	83	82	82	81	80	79	78	77	76	75	73	71	70	68	66
37	89	88	87	86	86	85	85	84	84	83	82	82	81	81	80	79	79	78	77	76	74	73	72	70	68	66	64
36	87	86	86	85	84	84	83	82	82	81	81	80	80	79	78	78	77	76	75	74	73	71	70	68	66	64	62
35	86	85	84	83	83	82	81	81	80	80	79	79	78	77	77	76	75	74	73	72	71	70	68	67	65	63	61
34	84	83	82	82	81	80	80	79	79	78	78	77	76	76	75	74	74	73	72	71	69	68	67	65	63	61	59
33	82	81	81	80	79	79	78	78	77	76	76	75	75	74	74	73	72	71	70	69	68	66	65	63	62	60	57
32	81	80	79	78	78	77	76	76	75	75	74	74	73	73	72	71	70	69	68	67	66	65	63	62	60	58	56
31	79	78	77	77	76	75	75	74	74	73	73	72	71	71	70	69	69	68	67	66	64	63	62	60	58	56	54
30	77	76	76	75	74	74	73	73	72	71	71	70	70	69	69	68	67	66	65	64	63	61	60	58	57	55	52
29	76	75	74	73	73	72	71	71	70	70	69	69	68	67	67	66	65	64	63	62	61	60	58	57	55	53	51
28	74	73	72	72	71	70	70	69	69	68	68	67	66	66	65	64	64	63	62	61	59	58	57	55	53	51	49
27	72	71	71	70	69	69	68	67	67	66	66	65	65	64	63	63	62	61	60	59	58	56	55	53	51	49	47
26	71	70	69	68	67	67	66	66	65	65	64	64	63	62	62	61	60	59	58	57	56	55	53	52	50	48	46
25	69	68	67	66	66	65	65	64	63	63	62	62	61	61	60	59	58	58	57	56	54	53	51	50	48	46	44
24	67	66	65	65	64	63	63	62	62	61	61	60	60	59	58	58	57	56	55	54	53	51	50	48	46	44	42
23	65	65	64	63	62	62	61	61	60	60	59	58	58	57	57	56	55	54	53	52	51	50	48	46	45	43	40
22	64	63	62	61	61	60	59	59	58	58	57	57	56	56	55	54	53	52	51	50	49	48	46	45	43	41	39
21	62	61	60	60	59	58	58	57	57	56	56	55	54	54	53	52	52	51	50	49	47	46	45	43	41	39	37
20	60	59	59	58	57	57	56	55	55	54	54	53	53	52	51	51	50	49	48	47	46	44	43	41	39	37	35
19	59	58	57	56	55	55	54	54	53	53	52	51	51	50	50	49	48	47	46	45	44	43	41	39	38	36	34
18	57	56	55	54	54	53	52	52	51	51	50	50	49	49	48	47	46	45	44	43	42	41	39	38	36	34	32
17	55	54	53	53	52	51	51	50	50	49	49	48	47	47	46	45	45	44	43	42	40	39	38	36	34	32	30
16	53	52	52	51	50	50	49	48	48	47	47	46	46	45	44	44	43	42	41	40	39	37	36	34	32	30	28
15	51	51	50	49	48	48	47	47	46	46	45	44	44	43	43	42	41	40	39	38	37	36	34	32	31	29	26
14	50	49	48	47	47	46	45	45	44	44	43	43	42	42	41	40	39	38	37	36	35	34	32	31	29	27	25
13	48	47	46	46	45	44	44	43	43	42	42	41	40	40	39	38	38	37	36	35	33	32	31	29	27	25	23
12	46	45	44	44	43	42	42	41	41	40	40	39	39	38	37	37	36	35	34	33	32	30	29	27	25	23	21
11	44	44	43	42	41	41	40	40	39	39	38	37	37	36	36	35	34	33	32	31	30	29	27	25	24	22	19
10	43	42	41	40	40	39	38	38	37	37	36	36	35	34	34	33	32	31	30	29	28	27	25	24	22	20	18
9	41	40	39	38	38	37	37	36	36	35	34	34	33	33	32	31	31	30	29	28	26	25	24	22	20	18	16
8	39	38	37	37	36	35	35	34	34	33	33	32	32	31	30	30	29	28	27	26	25	23	22	20	18	16	14
7	37	36	36	35	34	34	33	32	32	31	31	30	30	29	28	28	27	26	25	24	23	21	20	18	17	15	12
6	36	35	34	33	32	32	31	31	30	30	29	29	28	27	27	26	25	24	23	22	21	20	18	17	15	13	11
5	34	33	32	31	31	30	30	29	28	28	27	27	26	26	25	24	23	23	22	20	19	18	16	15	13	11	9
4	32	31	30	30	29	28	28	27	27	26	26	25	24	24	23	22	22	21	20	19	17	16	15	13	11	9	7
3	30	29	29	28	27	27	26	25	25	24	24	23	23	22	21	21	20	19	18	17	16	14	13	11	9	7	5
2	29	28	27	26	25	25	24	24	23	23	22	22	21	20	20	19	18	17	16	15	14	13	11	9	8	6	4
1	27	26	25	24	24	23	22	22	21	21	20	20	19	19	18	17	16	15	14	13	12	11	9	8	6	4	2
0	25	24	23	23	22	21	21	20	20	19	19	18	17	17	16	15	15	14	13	12	10	9	8	6	4	2	0

Appendix B

New York State Grade 4 Elementary-Level Science Test

May 2004 Written Test
Performance Test Form A

Reference to *Elementary-Level Science Core Curriculum Grades K-4*
Reference to Process Skills Based on Standard 4
Reference to Core Curriculum for Individual Test Questions

Note: Core curriculum is based on *NYS Learning Standards for Mathematics, Science, and Technology.*

NYS Learning Standards for Mathematics, Science, and Technology Standard/Area	Reference to *Elementary-Level Science Core Curriculum Grades K-4* Key Idea or Performance Indicator	Performance Test Form A Question Number			May 2004 Written Test Question Number
		Station 1	Station 2	Station 3	
Standard 1 Mathematical Analysis	**M1** Abstraction and symbolic representation are used to communicate mathematically.	1, 2, 4, 5		1	
	M2 Deductive and inductive reasoning are used to reach mathematical conclusions.			3, 5	16
	M3 Critical thinking skills are used in the solution of mathematical problems.	1, 2, 4	1, 3	1	23
Standard 1 Scientific Inquiry Key Idea 1	**S1.1** Ask "why" questions in attempts to seek greater understanding concerning objects and events they have observed and heard about.				
	S1.2 Question the explanations they hear from others and read about, seeking clarification and comparing them with their own observations and understandings.		4		
	S1.3 Develop relationships among observations to construct descriptions of objects and events and to form their own tentative explanations of what they have observed.		2		34
Standard 1 Scientific Inquiry Key Idea 2	**S2.1** Develop written plans for exploring phenomena or for evaluating explanations guided by questions or proposed explanations they have helped formulate.				
	S2.2 Share their research plans with others and revise them based on their suggestions.				
	S2.3 Carry out their plans for exploring phenomena through direct observation and through the use of simple instruments that permit measurement of quantities such as length, mass, volume, temperature, and time.			1	
Standard 1 Scientific Inquiry Key Idea 3	**S3.1** Organize observations and measurements of objects and events through classification and the preparation of simple charts and tables.		1, 3		
	S3.2 Interpret organized observations and measurements, recognizing simple patterns, sequences, and relationships.		2, 4	2, 3	16, 31, 32, 33
	S3.3 Share their findings with others and actively seek their interpretations and ideas.		4		
	S3.4 Adjust their explanations and understandings of objects and events based on their findings and new ideas.			4, 5	
Standard 1 Engineering Design	**T1.1 -T1.5** Engineering design is an iterative process involving modeling and optimization to develop technological solutions to problems within given constraints.			4	

NYS Learning Standards for Mathematics, Science, and Technology Standard/Area	Reference to *Elementary-Level Science Core Curriculum Grades K-4* Key Idea or Performance Indicator	Performance Test Form A Question Number			May 2004 Written Test Question Number
		Station 1	Station 2	Station 3	
Standard 2 Information Systems	**1** Information technology is used to retrieve, process, and communicate information as a tool to enhance learning.				18
	2 Knowledge of the impacts and limitations of information systems is essential to its effectiveness and ethical use.				
	3 Information technology can have positive and negative impacts on society, depending upon how it is used.				
Standard 4 Physical Setting	**1** Earth and celestial phenomena can be described by principles of relative motion and perspective.				1, 16
	2 Many of the phenomena that we observe on Earth involve interactions among components of air, water, and land.				2, 7, 8, 18
	3 Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.	1, 2, 3, 4, 5	1, 2		3, 4, 6, 17, 19, 20, 21, 23, 28
	4 Energy exists in many forms, and when these forms change energy is conserved.		1, 2		4, 5, 6, 22, 25, 26
	5 Energy and matter interact through forces that result in changes in motion.		3, 4	1, 2, 3, 4, 5	27, 30
Standard 4 Living Environment	**1** Living things are both similar to and different from each other and from nonliving things.				36, 37
	2 Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring.				9
	3 Individual organisms and species change over time.				10, 11, 12, 13, 24, 34
	4 The continuity of life is sustained through reproduction and development.				14, 31, 32
	5 Organisms maintain a dynamic equilibrium that sustains life.				15, 29, 35, 36, 37
	6 Plants and animals depend on each other and their physical environment.				34, 38, 39, 40
	7 Human decisions and activities have had a profound impact on the physical and living environment.				41

NYS Learning Standards for Mathematics, Science, and Technology Standard/Area	Reference to *Elementary-Level Science Core Curriculum Grades K-4* Key Idea or Performance Indicator	Performance Test Form A Question Number			May 2004 Written Test Question Number
		Station 1	Station 2	Station 3	
Standard 6 Interconnectedness: Common Themes	**1 Systems Thinking** Through systems thinking, people can recognize the commonalities that exist among all systems and how parts of a system interrelate and combine to perform specific functions.				25
	2 Models Models are simplified representations of objects, structures, or systems used in analysis, explanation, interpretation, or design.				17, 18, 25, 36, 37, 38, 39, 40
	3 Magnitude and Scale The grouping of magnitudes of size, time, frequency, and pressures or other units of measurement into a series of relative order provides a useful way to deal with the immense range and the changes in scale that affect the behavior and design of systems.				
	4 Equilibrium and Stability Equilibrium is a state of stability due either to a lack of change (static equilibrium) or a balance between opposing forces (dynamic equilibrium).				30
	5 Patterns of Change Identifying patterns of change is necessary for making predictions about future behavior and conditions.			2, 3	
	6 Optimization In order to arrive at the best solution that meets criteria within constraints, it is often necessary to make trade-offs.			5	41
Standard 7 Interdisciplinary Problem Solving	**1 Connections** The knowledge and skills of mathematics, science, and technology are used together to make informed decisions and solve problems, especially those related to issues of science/technology/society, consumer decision-making, design, and inquiry into phenomena.				19
	2 Strategies Solving interdisciplinary problems involves a variety of skills and strategies, including effective work habits; gathering and processing information; generating and analyzing ideas; realizing ideas; making connections among the common themes of mathematics, science, and technology; and presenting results.				

Grade 4 Elementary-Level Science Core Curriculum Grades K-4
Reference to Process Skills Based On Standard 4

Process Skills–General Skills		Performance Test Form A Question Number			May 2004 Written Test Question Number
		Station 1	Station 2	Station 3	
i	follow safety procedures in the classroom, laboratory, and field				
ii	safely and accurately use the following tools: hand lens, ruler (metric), balance, gram weights, spring scale, thermometer (C°, F°), measuring cups, graduated cylinder, timepiece(s)	1, 2, 4			
iii	develop an appreciation of and respect for all learning environments (classroom, laboratory, field, etc.)				
iv	manipulate materials through teacher direction and free discovery				
v	use information systems appropriately				
vi	select appropriate standard and nonstandard measurement tools for measurement activities	1, 2, 4			28
vii	estimate, find, and communicate measurements, using standard and nonstandard units	1, 2, 4, 5			23
viii	use and record appropriate units for measured or calculated values	2, 5			
ix	order and sequence objects and/or events				
x	classify objects according to an established scheme				17
xi	generate a scheme for classification				
xii	utilize senses optimally for making observations				
xiii	observe, analyze, and report observations of objects and events	3	1, 3	1	
xiv	observe, identify, and communicate patterns			2, 3	
xv	observe, identify, and communicate cause and effect relationships	3			
xvi	generate appropriate questions (teacher and student based) in response to observations, events, and other experiences				
xvii	observe, collect, organize, and appropriately record data, then accurately interpret results				
xviii	collect and organize data, choosing the appropriate representation: journal entries, graphic representations, drawings/pictorial representations				
xix	make predictions based on prior experiences and/or information			2, 3, 5	
xx	compare and contrast organisms/objects/events/ in the living and physical environments		2, 4		
xxi	identify and control variables/factors			4	
xxii	plan, design, and implement a short-term and long-term investigation based on a student- or teacher-posed problem				
xxiii	communicate procedures and conclusions through oral and written presentations				

Grade 4 Elementary-Level Science Written Test – May 2004
Reference to Core Curriculum for Individual Test Questions

Question Number	MST Learning Standard	Area within Standard 4 (PS or LE)	Key Idea or Major Understanding	Other Standards, Key Ideas, or Major Understandings	Process Skills Based on Standard 4 (p. 11 in core)
1	4	PS	1.1a		
2	4	PS	2.1c		
3	4	PS	3.2b	3.2a, 3.2c	
4	4	PS	4.1d	3.2b	
5	4	PS	4.1a		
6	4	PS	4.1c	3.1e	
7	4	PS	2.1c		
8	4	PS	2.1c		
9	4	LE	2.1a		
10	4	LE	3.1c	3.1a	
11	4	LE	3.1b		
12	4	LE	3.1b		
13	4	LE	3.1c		
14	4	LE	4.1e		
15	4	LE	5.2c		
16	1	—	S 3.2	M 2.1b; St 4 PS 1.1a, 1.1b	
17	6	—	KI 2	St 4 PS 3.1f	skill x
18	4	PS	2.1b	St 2 KI 1; St 6 KI 2	
19	7	—	KI 1	St 4 PS 3.2b	
20	4	PS	3.1b	3.1c	
21	4	PS	3.1e	3.1c	
22	4	PS	4.1b	4.1d	
23	1	—	M 3.1a	St 4 PS 3.1e	skill vii
24	4	LE	3.1b		
25	4	PS	4.1e	St 6 KI 1 & 2	
26	4	PS	4.1b	4.1a, 4.1c	
27	4	PS	5.1d		
28	4	PS	3.1e	3.1c	skill vi
29	4	LE	5.3a	5.3b	
30	6	—	KI 4	St 4 PS 5.1c, 5.1f	
31	1	—	S 3.2	St 4 LE 4.2b	
32	1	—	S 3.2a	St 4 LE 4.2b	
33	1	—	S 3.2	St 4 LE	
34	4	LE	6.1f	3.2a; St 1 S1.3	
35	4	LE	5.2f	5.2e	
36	4	LE	5.1a	1.1; St 6 KI 2	
37	4	LE	1.1c	5.1; St 6 KI 2	
38	4	LE	6.2a	St 6 KI 2	
39	4	LE	6.2b	St 6 KI 2	
40	4	LE	6.1d	6.1b; St 6 KI 2	
41	4	LE	7.1c	St 6 KI 6	