



Grade 8
Science Item Samples

Science Item Samples Scoring Guide



AMP Science Item Samples Scoring Guide

with Answer Keys, Scoring Guidelines, and Sample Papers

General Introduction

The AMP Science Item Samples are provided by Alaska Department of Education and Early Development (EED) for educators and students in Alaska as an example of the type of questions and content measured by the AMP Science summative assessment.

All items in both the AMP Science Item Samplers and the AMP Science summative assessment measure students understanding of the [Alaska Science Grade Level Expectations](https://education.alaska.gov/akstandards/standards/standards.pdf) (education.alaska.gov/akstandards/standards/standards.pdf).

The AMP Science summative assessment is a computer-based assessment, delivered via KITE Client. There are a variety of question types, including multiple choice and technology enhanced items. Technology enhanced items ask students to show their answer by completing tasks such as matching, highlighting, put ideas in order, or dragging & dropping labels to a picture. There are not questions that require students to keyboard, or type, an answer. Students will have access to all of the universal tools (highlighter, calculators, striker, etc.).

It is recommended that teachers use the AMP Technology Practice Tests to provide students with practice using the tools and answering the different types of technology enhanced items. To learn more about the Technology Practice Test go to: <https://education.alaska.gov/akassessments/techpractest.html>

The AMP Science Item Samples booklets are only available in the paper booklet form. The booklets contain items similar to those found on the AMP Science summative assessment. There are two types of questions: multiple choice and constructed response. For the multiple choice questions, students fill in bubbles on an answer sheet. The second type of question, constructed response, requires the student to write out an answer.

Resources Available

In addition to the student booklets in grade 4, 8, and 10, there are the following tools associated with the item samples in the three tested grades:

- scoring guide, with answer keys;
- scoring guidelines;
- sample student papers;
- Item Samples Booklet “test maps.”

The AMP Science Item Samples resources are located on the EED website. Select the purple Assessment star, AMP Tab, and the resources can be found in the Educator Resources box. <https://education.alaska.gov/tls/Assessments/AMPresources.html>

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Content

This guide is divided into two sections. Section I includes the answer keys and scoring guidelines (with detailed item-specific scoring rubrics for scoring constructed-response questions) and sample student papers with annotations for each score point. Section II presents a grade-level test map that lists item sequence, corresponding Grade Level Expectations, and an answer key.

Scoring Guidelines

The Item Samples booklets include two types of science items: multiple choice and constructed response.

- Multiple-choice (MC) items have four answer options. MC items are one point items.
- Short constructed-response (SCR) required the student to write a response. SCR items are two-point items.

Sample student papers are included for each short constructed-response. An item-specific annotation follows each sample student response. The annotations are designed to provide teachers with the explanation of why the score point was awarded.

Reminder: There are not constructed response questions on the AMP Science Summative assessment.

Test Maps

The test map presents the sequence of the items in the booklet, the Grade Level Expectation to which each item is aligned, and the answer key. This at-a-glance chart is designed to assist the teacher with scoring the booklet.

IMPORTANT: The Science Item Samples booklets are not representative of the depth and breadth of the Alaska Science GLEs or the AMP Science Assessment.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

1. C
2. D
3. A
4. C
5. C
6. A
7. D
8. B
9. D

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

This question is worth 2 points.

10. The data table shows information for some animals from a coastal ecosystem in Alaska. Included in the data table are some of the sources of food and some known predators of each animal.

Alaska Animal Information

Animal	Food Source	Predators
herring	phytoplankton, zooplankton, krill	salmon, fur seals, harbor seals, bald eagles
salmon	herring, anchovies	harbor seals, brown bears, bald eagles
glaucous gull	small birds, salmon eggs, berries	bald eagles
fur seal	herring, squid	polar bears

Use the information from the data table to draw a food web with at least five or more types of organisms. Be sure to include arrows between the organisms showing the correct direction of energy transfer.

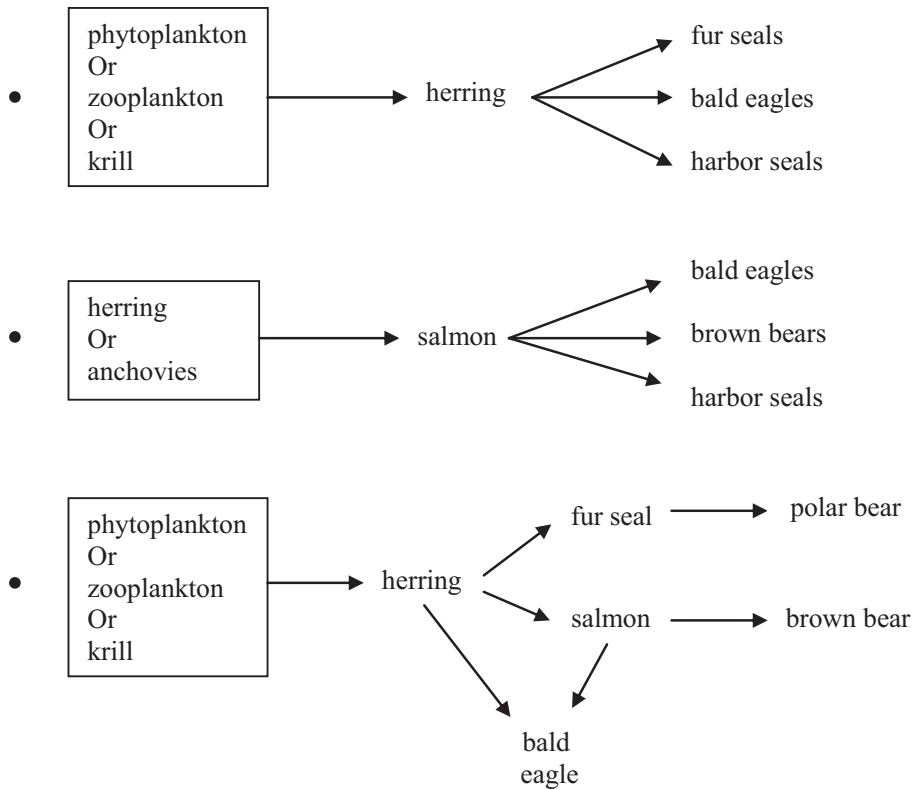
SECTION I: Grade 8 Science Practice Test Answer Keys, Scoring Guidelines, and Sample Student Papers

10. Short Constructed Response

Score	Rubric
2	2 of the 2 parts are correct.
1	1 of the 2 parts is correct. OR some correct and relevant work or explanation
0	Response is incorrect or irrelevant.

- 1 point for constructing a food web with at least five types of the organisms from the data table
- 1 point for having arrows representing the correct direction of energy transfer

Correct Response:



Scoring Note:

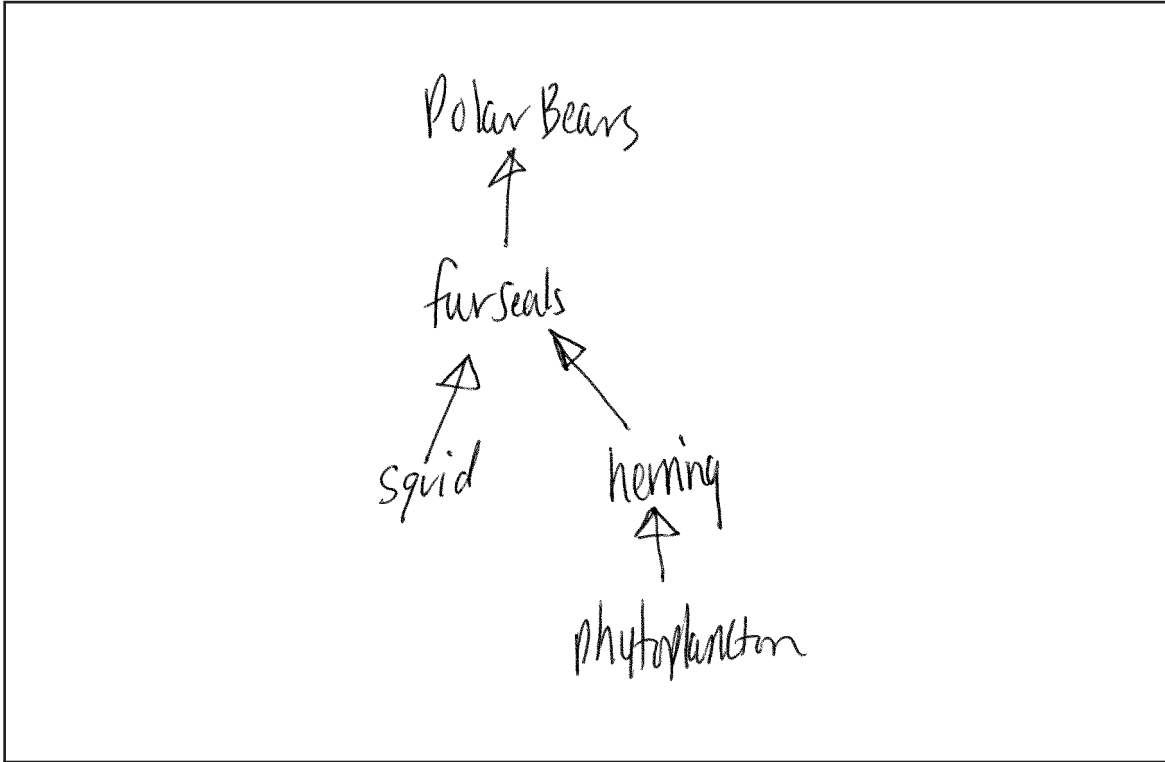
Students are not limited to the above combinations. Students will receive credit for any appropriate combination based on the information in the data table.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

Item #10 Response Score: 2

Short Constructed Response:

Use the information from the data table to draw a food web with at least five or more types of organisms. Be sure to include arrows between the organisms showing the correct direction of energy transfer.



Annotation for score point: 2

All parts are correct:

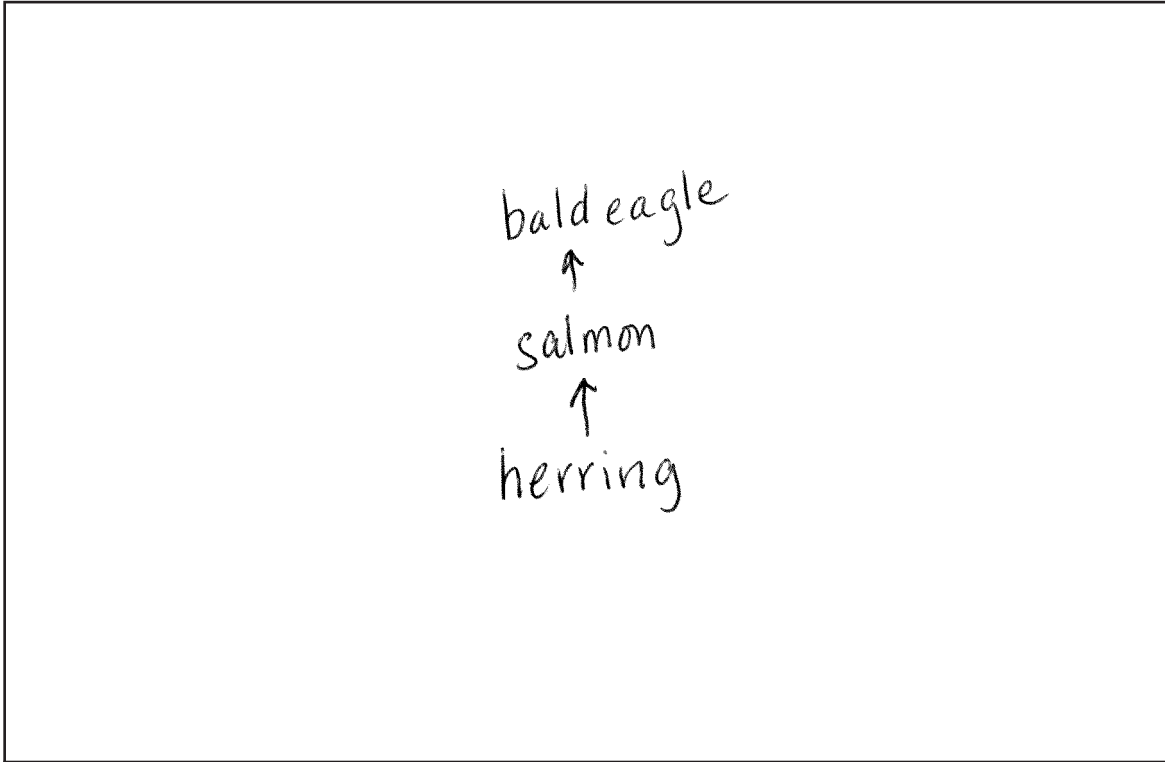
1. A food web that contains five organisms showing energy transfer relationships is provided.
2. Arrows drawn in the correct direction are provided.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

Item #10 Response Score: 1

Short Constructed Response:

Use the information from the data table to draw a food web with at least five or more types of organisms. Be sure to include arrows between the organisms showing the correct direction of energy transfer.



Annotation for score point: 1

Some part is correct:

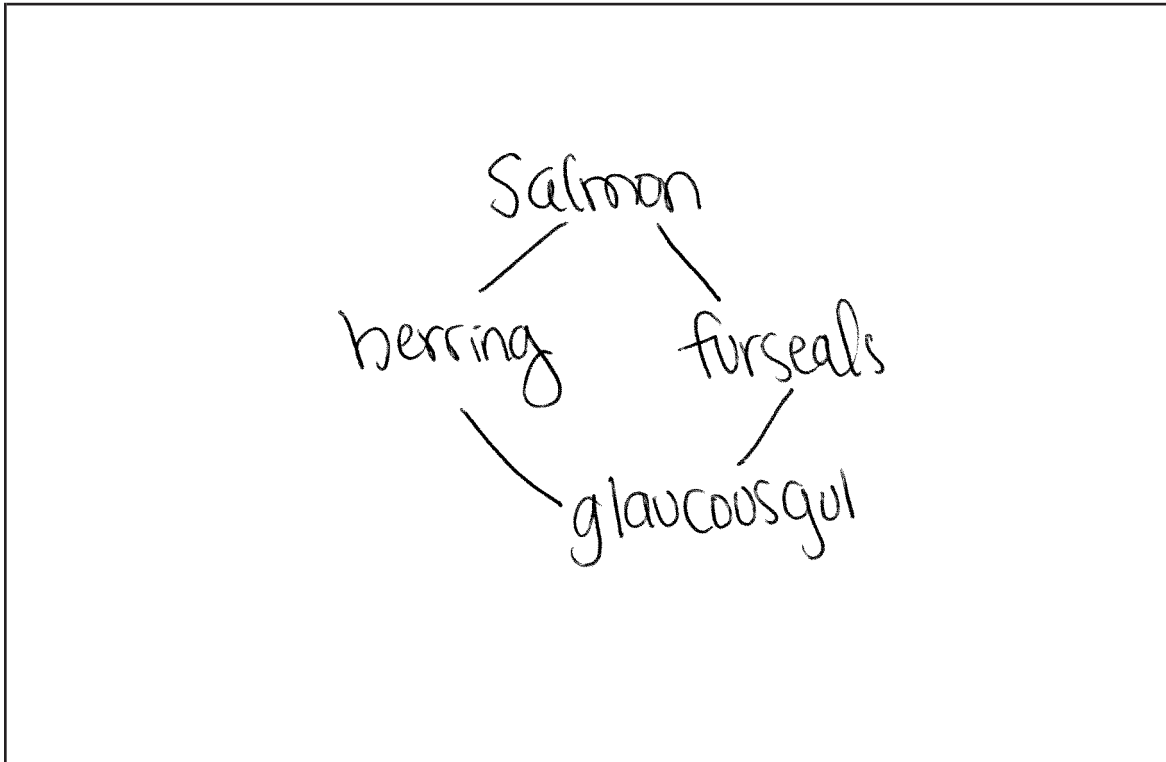
1. The food web provided contains only three organisms.
2. Arrows drawn in the correct direction are provided.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

Item #10 Response Score: 0

Short Constructed Response:

Use the information from the data table to draw a food web with at least five or more types of organisms. Be sure to include arrows between the organisms showing the correct direction of energy transfer.



Annotation for score point: 0

No part is correct:

1. The food web provided is not correct.
2. No arrows to show direction are provided.

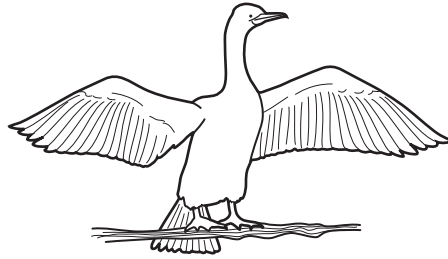
**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

- 11. D
- 12. A
- 13. C
- 14. A
- 15. C
- 16. D
- 17. A
- 18. B
- 19. B
- 20. B
- 21. A

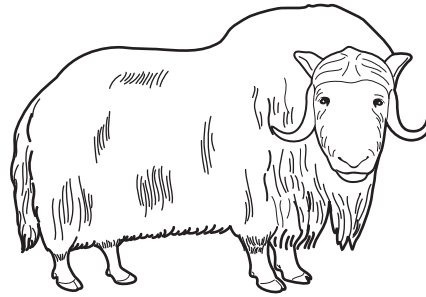
**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

This question is worth 4 points.

22. Use the pictures and classification chart to answer the question.



cormorant



muskox

Classification Chart

Animal	Group	Classifying Characteristic
cormorant	?	feathers
muskox	mammals	?

The classification chart is missing information for each animal.

A. Write the missing information for the classification chart below.

cormorant group: _____

muskox classifying characteristic: _____

B. Identify two observable characteristics that do **not** help place the cormorant or the muskox into a specific group.

1. _____

2. _____

SECTION I: Grade 8 Science Practice Test Answer Keys, Scoring Guidelines, and Sample Student Papers

22. Extended Constructed Response

Score	Rubric
4	4 of the 4 parts are correct.
3	3 of the 4 parts are correct.
2	2 of the 4 parts are correct.
1	1 of the 4 parts is correct. OR some correct and relevant work or explanation
0	Response is incorrect or irrelevant.

- 1 point for identifying the group name for the cormorant
- 1 point for identifying one or more characteristics that would classify the muskox as a mammal
- 2 points for identifying two observable characteristics that do not place the cormorant or the muskox into a specific group

Correct Response:

Part A:

- cormorant group: birds or aves
- classifying characteristic: fur/hair, gives live birth, produces milk, warm-blooded, diaphragm, three bone middle ear, or sweat glands

Part B:

- color of body covering
- number, location, or size of eyes
- body or head size
- body weight
- size of nose
- size or location of ears
- type of sound they make

Scoring Note:

Students are not limited to the list in part B as long as the provided response does not help classify either organism into a specific group.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

Item #22 Response Score: 4

Extended Constructed Response:

A. Write the missing information for the classification chart below.

cormorant group: Bird

muskox classifying characteristic: fur

B. Identify two observable characteristics that do **not** help place the cormorant or the muskox into a specific group.

1. the size of each animals head

2. the number of limbs on each animal

Annotation for score point: 4

All parts are correct:

1. Correct name of group for the cormorant is provided.
2. Correct classifying characteristic for the muskox is provided.
3. Two correct observable characteristics that do not place a cormorant or a muskox into a specific group are provided.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

Item #22 Response Score: 3

Extended Constructed Response:

A. Write the missing information for the classification chart below.

cormorant group: bird

muskox classifying characteristic: horns

B. Identify two observable characteristics that do **not** help place the cormorant or the muskox into a specific group.

1. It has webbed feet.

2. It has a tail

Annotation for score point: 3

Some parts are correct:

1. Correct name of group for the cormorant is provided.
2. Incorrect classifying characteristic for the muskox is provided.
3. Two correct observable characteristics that do not place a cormorant or a muskox into a specific group are provided.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

Item #22 Response Score: 2

Extended Constructed Response:

A. Write the missing information for the classification chart below.

cormorant group: bird

muskox classifying characteristic: fur

B. Identify two observable characteristics that do **not** help place the cormorant or the muskox into a specific group.

1. The bird has feathers.

2. The mammal has fur.

Annotation for score point: 2

Some parts are correct:

1. Correct name of group for the cormorant is provided.
2. Correct classifying characteristic for the muskox is provided.
3. Two incorrect observable characteristics that do not place a cormorant or a muskox into a specific group are provided.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

Item #22 Response Score: 1

Extended Constructed Response:

A. Write the missing information for the classification chart below.

cormorant group: Bird

muskox classifying characteristic: 4 legs.

B. Identify two observable characteristics that do **not** help place the cormorant or the muskox into a specific group.

1. birds can fly

2. mammals walk

Annotation for score point: 1

Some part is correct:

1. Correct name of group for the cormorant is provided.
2. Incorrect classifying characteristic for the muskox is provided.
3. Two incorrect observable characteristics that do not place a cormorant or a muskox into a specific group are provided.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

Item #22 Response Score: 0

Extended Constructed Response:

A. Write the missing information for the classification chart below.

cormorant group: mammals

muskox classifying characteristic: birds

B. Identify two observable characteristics that do **not** help place the cormorant or the muskox into a specific group.

1. Muskox = is a mammal

2. Cormorant = has feathers

Annotation for score point: 0

No part is correct:

1. Incorrect name of group for the cormorant is provided.
2. Incorrect response for a classifying characteristic for the muskox is provided.
3. Two incorrect responses are provided for the observable characteristics that do not help to place a cormorant or a muskox into a specific group.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

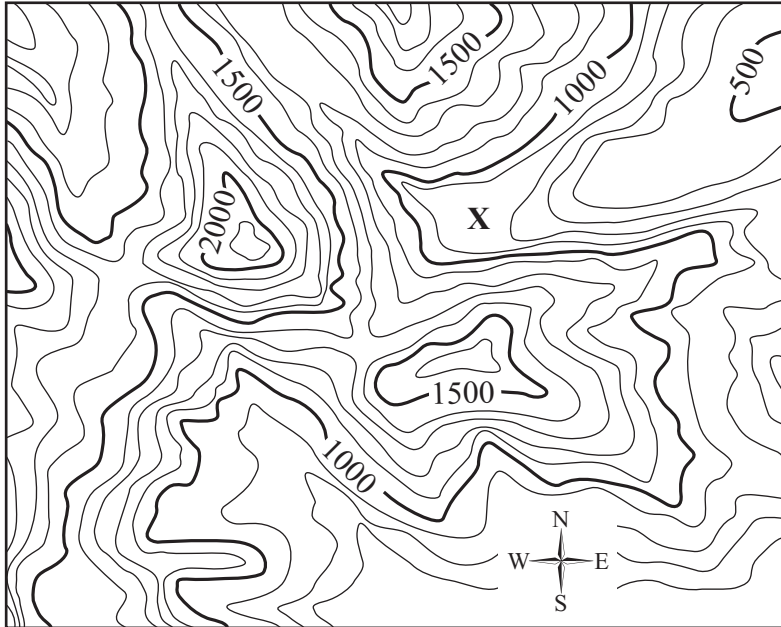
- 23. C
- 24. B
- 25. D
- 26. C
- 27. B
- 28. B
- 29. D
- 30. C
- 31. B
- 32. B
- 33. B
- 34. C

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

This question is worth 2 points.

35. The topographic map below shows part of an island.

Topographic Map



A. In which general compass direction will water flow from point X?

B. Explain how topographic maps indicate the steepest locations in the mapped area.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

35. Short Constructed Response

Score	Rubric
2	2 of the 2 parts are correct.
1	1 of the 2 parts is correct. OR some correct and relevant work or explanation
0	Response is incorrect or irrelevant.

- 1 point for identifying the likely direction of the flow of water
- 1 point for explaining how topographic maps indicate the relative steepness of an area

Correct Response:

Part A:

- The water flows northeastward from point X.
- The water flows eastward from point X.

Part B:

- The closer together the lines are, the steeper the slope of the land.
- The farther apart the lines are, the flatter the terrain.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

Item #35 Response Score: 2

Short Constructed Response:

- A. In which general compass direction will water flow from point X?

East.

- B. Explain how topographic maps indicate the steepest locations in the mapped area.

The lines are closer together on the steep parts.

Annotation for score point: 2

All parts are correct:

1. A correct direction in which the water will likely flow is provided.
2. A correct explanation of how topographic maps indicate steepness is provided.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

Item #35 Response Score: 1

Short Constructed Response:

- A. In which general compass direction will water flow from point X?

The water will flow in the North East
direction.

- B. Explain how topographic maps indicate the steepest locations in the mapped area.

The topographic map has numbers over
the steep locations or mountains.

Annotation for score point: 1

Some part is correct:

1. A correct direction in which the water will likely flow is provided.
2. An incorrect explanation of how topographic maps indicate steepness is provided.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

Item #35 Response Score: 0

Short Constructed Response:

- A. In which general compass direction will water flow from point X?

It's about Northwest

- B. Explain how topographic maps indicate the steepest locations in the mapped area.

The line get darker

Annotation for score point: 0

No part is correct:

1. An incorrect direction in which the water will likely flow is provided.
2. An incorrect explanation of how topographic maps indicate steepness is provided.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

- 36. C
- 37. A
- 38. A
- 39. C
- 40. D
- 41. C
- 42. B
- 43. C
- 44. B
- 45. C
- 46. C
- 47. D
- 48. A
- 49. A

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

This question is worth 2 points.

50. The data table shows physical properties of three solid materials.

Physical Properties of Three Solid Materials

Material	Made of Two or More Elements	Conducts Electricity	Is Flammable
X	no	no	yes
Y	yes	no	no
Z	yes	yes	no

A. Identify a material in the data table that is **most likely** a metal.

B. Explain why material Y is **most likely** a compound and material X is not.

SECTION I: Grade 8 Science Practice Test Answer Keys, Scoring Guidelines, and Sample Student Papers

50. Short Constructed Response

Score	Rubric
2	2 of the 2 parts are correct.
1	1 of the 2 parts is correct. OR some correct and relevant work or explanation
0	Response is incorrect or irrelevant.

- 1 point for identifying the metal from the list of materials
- 1 point for explaining why material Y is a compound and material X is not

Correct Response:

Part A:

- Material Z is a metal.

Part B:

- Material Y is a compound because it is made of two or more elements.
- Material X is not a compound because it is made of only one element.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

Item #50 Response Score: 2

Short Constructed Response:

- A. Identify a material in the data table that is **most likely** a metal.

material Z is a metal

- B. Explain why material Y is **most likely** a compound and material X is not.

material Y is made of two or more

elements

material X is made of one element

Annotation for score point: 2

All parts are correct:

1. A correct identification of the material that is a metal is provided.
2. A correct explanation of why material Y is most likely a compound and material X is not a compound is provided.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

Item #50 Response Score: 1

Short Constructed Response:

- A. Identify a material in the data table that is **most likely** a metal.

The material in the table that is a metal
is material Y.

- B. Explain why material Y is **most likely** a compound and material X is not.

material Y is most likely a
compound because it is made of
two or more elements, but material
X is made of one element.

Annotation for score point: 1

Some part is correct:

1. An incorrect identification of the material that is a metal is provided.
2. A correct explanation of why material Y is most likely a compound and material X is not a compound is provided.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

Item #50 Response Score: 0

Short Constructed Response:

- A. Identify a material in the data table that is **most likely** a metal.

X, Y, Z

- B. Explain why material Y is **most likely** a compound and material X is not.

Material Z is a compound material X
is not.

Annotation for score point: 0

No part is correct:

1. An incorrect identification of the material that is a metal is provided.
2. An incorrect explanation of why material Y is most likely a compound and material X is not a compound is provided.

**SECTION I: Grade 8 Science Practice Test Answer Keys,
Scoring Guidelines, and Sample Student Papers**

- 51. C
- 52. C
- 53. C
- 54. D
- 55. C
- 56. A

SECTION II: Grade 8 Science Test Map

SCIENCE		
Sequence	GLE	Key
1	A.1.1	C
2	A.1.1	D
3	D.2.1	A
4	A.1.1	C
5	D.4.2	C
6	D.1.2	A
7	C.2.3	D
8	B.4.2	B
9	B.1.1	D
10	A.2.1/C.3.2	Short Constructed Response
11	G.2.1	D
12	D.3.1	A
13	C.2.2	C
14	B.2.1	A
15	B.1.1	C
16	D.2.1	D
17	C.1.1	A
18	A.1.1	B
19	A.1.1	B
20	C.2.1	B
21	B.2.1	A
22	A.1.1/C.2.1	Extended Constructed Response
23	A.1.1	C
24	C.2.3	B
25	A.2.1	D
26	B.4.1	C
27	B.4.2	B
28	B.1.1	B
29	C.2.2	D
30	D.1.2	C
31	A.1.1	B

SECTION II: Grade 8 Science Test Map

SCIENCE		
Sequence	GLE	Key
32	C.3.1	B
33	B.4.2	B
34	B.2.1	C
35	A.2.1/D.2.1	Short Constructed Response
36	C.2.1	C
37	D.4.2	A
38	A.2.1	A
39	G.2.1	C
40	C.3.2	D
41	D.1.2	C
42	D.3.2	B
43	C.2.1	C
44	B.4.1	B
45	C.2.2	C
46	A.1.1	C
47	A.2.1	D
48	C.1.1	A
49	C.3.2	A
50	A.1.1/B.1.1	Short Constructed Response
51	A.2.1	C
52	B.4.2	C
53	D.1.2	C
54	C.2.2	D
55	A.2.1	C
56	B.4.1	A

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**Comprehensive System
of Student Assessment
(CSSA)**

**Standards Based Assessments
(SBAs)**

Grade 8

**Science Practice Test Scoring Guide
Spring 2012**