New England Common Assessment Program

Released Items Support Materials 2009

Grade 8 Science

Grade 8 Science Released Item Information

Item Number	Big Idea[1]	Assessment Target	Depth of Knowledge Code	Item Type[2]	Answer Key	Total Possible Points
1	SAE	PS 1-4	2	MC	D	1
2	SAE	PS 2-6	2	MC	A	1
3	INQ	PS 3-8	2	MC	B	1
4	SAE	PS 1-4	2	CR		4
5	SAE	ESS 1-4	2	MC	A	1
6	POC	ESS 1-5	1	MC	B	1
7	SAE	ESS 2-8	2	MC	C	1
8	FAF	LS 1-4	1	MC	B	1
9	SAE	LS 2-7	2	MC	C	1
10	POC	LS 4-11	2	MC	B	1

Grade 8 Science Released Inquiry Task Information

Item Number	Big Idea[1]	Inquiry Construct	Depth of Knowledge Code	Item Type[2]	Total Possible Points
1	INQ	1	3	SA	2
2	INQ	4	3	SA	2
3	INQ	10	2	SA	2
4	INQ	12	2	SA	2
5	INQ	1	3	SA	2
6	INQ	5	2	CR	3
7	INQ	10	2	CR	3
8	INQ	13	3	SA	2

[1]Big Idea: NOS = Nature of Science, SAE = Systems and Energy, MAS = Models and Scale, POC = Patterns of Change, FAF = Form and Function, INQ = Scientific Inquiry

[2]Item Type: MC = Multiple Choice, CR = Constructed Response, SA = Short Answer

PS1 (5–8) SAE-4	Represent or explain the relationship between or among energy, molecular motion, temperature, and states of matter.

1 Which sequence represents matter that is losing energy?

A. solid → gas → liquid
B. solid → liquid → gas
C. gas → solid → liquid
D. gas → liquid → solid

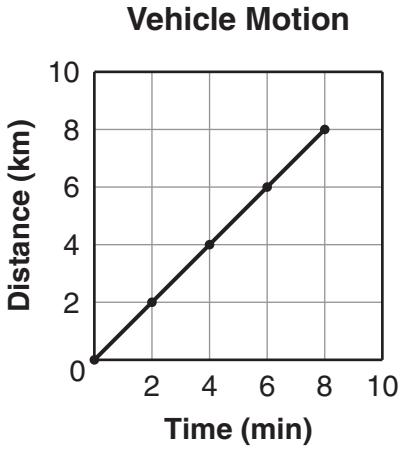
PS2 (5–8) SAE-6	Given a real-world example, show that within a system, energy transfers from one form to another (i.e., chemical, heat, electrical, gravitational, light, sound, mechanical).

2 Photosynthesis is a chemical reaction that occurs inside green plant cells. Which sentence describes one important energy conversion that occurs as a result of photosynthesis?

A. Light is converted to chemical energy.
B. Carbon dioxide is converted to light energy.
C. Oxygen is converted to chemical energy.
D. Chlorophyll is converted to light energy.

PS3 (5–8) INQ-8	Use data to determine or predict the overall net effect of multiple forces (e.g., friction, gravitational, magnetic) on the position, speed, and direction of motion of objects.

3 The graph below describes the motion of a vehicle traveling at a constant speed for 8 minutes.



What is the average speed of the vehicle after 5 minutes?

A. 1 km

B. 1 km/min

C. 5 km

D. 5 km/min

PS1 (5–8) SAE-4	Represent or explain the relationship between or among energy, molecular motion, temperature, and states of matter.

4 A naturally occurring element has a melting point of –38.9°C and a boiling point of 356.7°C.

a. Identify the element's state of matter at 0°C and explain why the element is in this state.

The same element is heated from a temperature of –42.0°C to a temperature of –35.0°C.

b. Describe what happens to the element as it is heated from –42.0°C to –35.0°C. Be sure to include what happens to the atoms of the element.

Scoring Guide

Score	Description
4	The response demonstrates a thorough understanding of the relationship between energy, temperature, molecular motion, and states of matter. The response identifies and explains an element's state of matter at a certain temperature. The response also explains the change in state and describes the molecular motion of an element as it is heated. The response has no errors or omissions.
3	The response demonstrates a general understanding of the relationship between energy, temperature, molecular motion, and states of matter. The response has one error or omission.
2	The response demonstrates a limited understanding of the relationship between energy, temperature, molecular motion, and states of matter. The response has errors or omissions.
1	The response demonstrates a minimal understanding of the relationship between energy, temperature, molecular motion, and states of matter. The response has several errors or omissions.
0	The response is incorrect or contains work that is irrelevant to the skill or concept being measured.
Blank	No response

Training Notes:

a. The element described exists as a liquid at 0°C because 0°C is warmer than the melting point of –38.9°C and cooler than the boiling point of 356.7°C. The student needs to refer to both melting point and boiling point for full credit. Also, the student must state that the element is in a liquid state.

b. The element is in a solid state at –42°C. As the element is heated, the atoms of the element begin to vibrate more rapidly. As the element continues to be heated, the atoms vibrate quickly enough to break free from their fixed positions and begin to move around freely. Once the temperature is higher than –38.9°C, the atoms are moving freely and the element is in a liquid state. The student must state that the element is in a liquid state.

– Students may use a number line.
– Labeled diagrams are acceptable as part of explanation.

Additional scoring notes below:

4	3	2	1
– Part A: Student refers to both melting point and boiling point. – Part A: Student must state that the element is in a liquid state. – Part B: Student refers to both the atom's motion and the element melting into a liquid.	– Part A: Student must state that the element is in a liquid state. – Part B: Student refers to the atom's motion (moving freely, increasing speed/vibration) or element melting into a liquid, but not both. – Part B: Only refers to melting, but if the change of state is mentioned in part A it's OK.		

Score Point 4 (Example A)

❹

a) the element's state of matter at 0°C is liquid, because it used to be a solid until it melted at -38.9°C. Since the liquid hasn't reached its boiling point yet, it hasn't turned into gas yet.

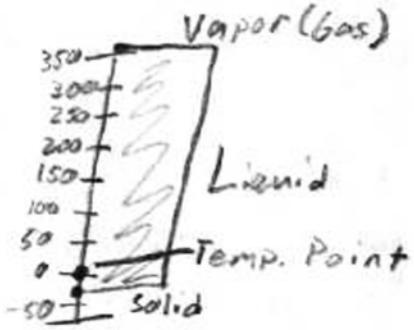
b) As the element is being heated from -42.0°C to -35.0°C, it's melting into a liquid from a solid. During this, the atoms begin moving more rapidly.

The response demonstrates a thorough understanding. The response correctly identifies the element as liquid, and explains that its temperature is above the melting point, but below the boiling point. The response correctly identifies that the element is changing from a solid to a liquid in part B, and explains that the atoms will move more rapidly as the element is heated. No errors or omissions are present.

SCORE POINT 4 (EXAMPLE B)

4

(a) The element's state at 0°C is a liquid. This because 0°C is higher than the melting point (-38.9°C), and lower than the boiling point (356.7°C).



(b) As the element is heated, it starts to melt as it passes the melting point. The atoms are starting to vibrate more, and stay together, but more loosely than before.

Atoms in the element

The response shows thorough understanding. The response correctly identifies that the element is in a liquid state, and explains that the element is between its melting and boiling points. The response correctly identifies that the element is changing from a solid to a liquid in part B, and thoroughly explains the movement of the atoms with words and a diagram. No errors or omissions are present.

Score Point 3

❹

A.) liquid, because It melts at -38.9°C (making it liquid) and doesn't boil until 356.7°C (gas) and 0°C is between those.

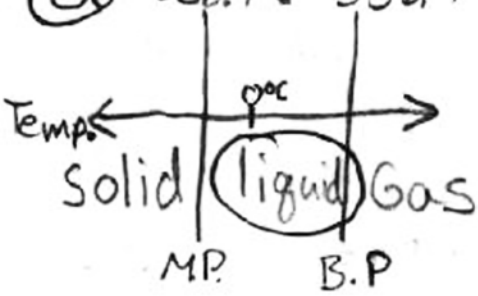
B.) The Element melts because Its melting point is -38.9°C and It heats from -42°C to -35°C which is getting it over melting point.

The response shows general understanding. The response correctly identifies that the element is in a liquid state, and explains that the element is between its melting and boiling points. The response correctly explains that the element will melt in part B, but doesn't describe the movement of the atoms.

SCORE POINT 2 (EXAMPLE A)

❹

(a) -38.9°C 356.7°C



This element would be a liquid at 0°C. It would be a liquid because 0°C is between -38.9°C and 356.7°C and when the elements degree is inbetween those degrees it is a liquid.

(b) Nothing happens to this element when it is heated from -42°C to -35°C. Nothing happens because it is still a solid at both tempetures.

The response demonstrates a limited understanding. The response correctly identifies the element as a liquid in part A, and explains that the element is between its melting and boiling points. The response incorrectly states that nothing will happen to the element's state of matter in part B.

SCORE POINT 2 (EXAMPLE B)

4

(A) The state of matter the element is a liquid, the reason it is this mass is because it isn't passed melting point, and or boiling point so its not a solid, or a gas and the last one is a liquid.

(B) in this particular element as it starts to get heated the atoms start to move around more and starts to vibrate the element does not change state of matter.

The response shows limited understanding. Part A correctly identifies the element as a liquid, but the explanation (it isn't past melting point and/or boiling point) is not clear. The response explains what would happen to the movement of the atoms in part B, but doesn't acknowledge that the element will move from solid state to liquid state.

Score Point 1

❹

It's still a lquid because it didn't reach its boling Point yet

It freezes

The response demonstrates a minimal understanding by identifying that the element is in a liquid state in part A.

Score Point 0

4

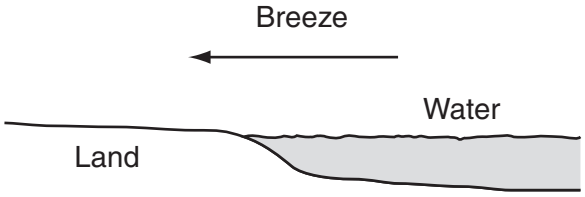
(A) At 0°C the natural element's state of matter would be in the middle or more towards the -38.9°C because it's closer to -38.9°C than 356.7°C

(B) The element might turn into a gas because the atoms are compressing together when they're cold!!

The response is totally incorrect.

ESS1 (5–8) SAE-4	Explain the role of differential heating or convection in ocean currents, winds, weather and weather patterns, atmosphere, or climate.

5 In the summer, coastal towns usually experience cool ocean breezes, as shown in the diagram below.



Which process creates the type of ocean breeze shown?

A. Cool air above the ocean sinks and warm air above the land rises.

B. Cool air above the ocean rises and warm air above the land sinks.

C. Warm water evaporates and condenses above the ocean.

D. Warm water condenses and precipitates above the ocean.

ESS1 (5–8) POC-5	Using data about a rock's physical characteristics, make and support an inference about the rock's history and connection to rock cycle.

6 Which type of rock forms under high temperatures and pressure but is **not** exposed to enough heat to melt?

A. igneous
B. metamorphic
C. sedimentary
D. volcanic

ESS2 (5–8) SAE-8	Explain temporal or positional relationships between or among the Earth, Sun, and Moon (e.g., night/day, seasons, year, tides) OR how gravitational force affects objects in the solar system (e.g., moons, tides, orbits, satellites).

7 What causes Earth's year to be shorter than Jupiter's year?

A. the gravitational pull of Jupiter's moons
B. the shape of Earth's orbit around the Sun
C. the distance between Earth and the Sun
D. the mass and density of Jupiter

LS1 (5–8) FAF-4	Explain relationships between or among the structure and function of the cells, tissues, organs, and organ systems in an organism.

8 The diagram below shows the levels of organization in a multicellular organism.

Cells → Tissue → Organs → Organ systems → Organism

Which level of organization is made up of cells working together to do just one job?

A. cells
B. tissue
C. organ systems
D. organism

LS2 (5–8) SAE-7	Given an ecosystem, trace how matter cycles among and between organisms and the physical environment (includes water, oxygen, food web, decomposition, recycling but not carbon cycle or nitrogen cycle).

9 Which two processes work together to cycle oxygen through an ecosystem?

A. respiration and precipitation
B. evaporation and precipitation
C. respiration and photosynthesis
D. evaporation and photosynthesis

LS4 (5–8) POC-11	Using data provided, select evidence that supports the concept that genetic information is passed on from both parents to offspring.

10 In an experiment, fruit flies with normal wings were allowed to breed inside two different containers. The table below shows the wing types of the offspring.

Wing Types of Offspring

Container	Normal Wings	Tiny Wings
W	223	61
X	211	90

Which statement is **best** supported by the data in the table?

A. Fruit flies have only one kind of wing type.

B. Both parent fruit flies passed on the tiny wing characteristic.

C. Parent fruit flies with normal wings always have offspring with normal wings.

D. Just one parent fruit fly determined the wing type the offspring have.

Broad Area of Inquiry: **Formulating Questions and Hypothesizing**
Inquiry Construct 1: Analyze information from observations, research, or experimental data for the purpose of formulating a question, hypothesis, or prediction.

❶ Write a prediction about the possible relationship between the number of weevils and the growth of EWM in a lake. Use information from the story to explain your prediction.

Scoring Guide

Score	Description
2	Response makes a reasonable prediction about the relationship between weevils and EWM and explains the prediction using information from the story.
1	Response makes a reasonable prediction about the relationship between weevils and EWM, but does not contain a sufficient explanation.
0	Response does not contain any correct elements or is irrelevant.
Blank	No response

Training Notes:

While the expected response is "more weevils lead to less EWM," other responses such as "weevils don't affect EWM growth" or "more EWM lead to more weevils" are also acceptable. (Prediction does not have to be "correct" since the students have not done any experiments at this point.) However, prediction should be reasonable and related to weevils and EWM. A response like "more weed killer will get rid of the EWM" is irrelevant and would get no points.

Score Point 2

❶

I predict that the higher the number of weevils, the more Eurasian Water Milfoil they will eat, and the less of those plants there will be. The story says that weevils are natural predators of EWM. So they will probably eat plenty of the weeds.

The response gives a prediction, and then uses information from the story to support the prediction.

Score Point 1

❶

If there were more weevils, there would be less EWM.

The response gives a prediction with no supporting information.

Score Point 0

❶

Hmm, I think its going too this lake as no one will NEVER go swimming or boating it these two lakes.

The response never makes a prediction.

Broad Area of Inquiry:	**Planning and Critiquing of Investigations**
Inquiry Construct 4:	Identify information/evidence that needs to be collected in order to answer the question, hypothesis, prediction.

❷ What evidence do the club members need to collect to test the relationship between the number of weevils and the growth of EWM in Two Island Lake? Use information from the story to explain your reasoning.

Scoring Guide

Score	Description
2	Response explains the relationship between weevils and EWM and uses information from the scenario. Response shows at least a general understanding of the evidence needed to test the relationship.
1	Response demonstrates a limited understanding of the evidence needed to test the relationship.
0	Response does not contain any correct elements or is irrelevant.
Blank	No response

Training Notes:

Listing materials only—without explanation—does not demonstrate a limited understanding.

SCORE POINT 2

❷

The evidence they need to collect is how much Damage can be Done to the EWM with one Weevile. They also need to collect how long that will take, and how fast the EWM is growing. Those are the things you need to find out to find the relation of the EWM and Weevikes.

The response addresses the growth of EWM and how it relates to the number of weevils it takes to kill EWM. The response uses information from the story for support ("how much damage can be done to the EWM with one weevile" is enough—shows that weevils consume EWM).

Score Point 1

❷

The club members would have to take a sample of the lake and see how much EWM and how many weevils were in that sample. That way they could check the population.

The response suggests a couple pieces of evidence that could be useful, but doesn't relate the evidence to information from the story (why would EWM and weevil populations relate to each other?).

Score Point 0

❷

they need to find out where the plants originally come from to determine if they are causing the problem.

This information would probably not be helpful to the experiment.

Broad Area of Inquiry: Conducting Investigations
Inquiry Construct 10: Summarize results based on data.

❸ Explain why the scientists counted the number of weevils at the experimental sites (with added weevils) **and** the number of weevils at the control sites (no added weevils). Use specific examples in your explanation.

Scoring Guide

Score	Description
2	Response provides a general explanation that counting weevils at both the experimental and control sites makes the experiment valid. The response gives at least one example to support the explanation.
1	Response provides a limited explanation for counting weevils at both the experimental and control sites. The response may or may not use examples to support the explanation.
0	Response does not contain any correct elements or is irrelevant.
Blank	No response

SCORE POINT 2

❸

The scientists made a control and experimental site to see the differences in each site. The control, where no weevils were added, had 25 in '93 and 52 in '94. The experimental, where 20,000 weevils were added, had a result of 34 in '93 and 73 in '94. As you can see, there is a huge difference over the years.

The response explains why the scientists counted the weevils at each site, and uses specific data to support the explanation.

Score Point 1

❸

The Scientist counted the number of weevils at the experimental sites (with added weevils) and the number of weevils at the control sites (no added weevils) because they wanted to see how weevils affect the growth of EWM.

The response states why the scientists counted the number of weevils at each site, but it does not use specific evidence for support.

Score Point 0

❸

Because if you subtract the number of weevles in the control sites from the expirimental you can get the exact number of how many weevles there were alltogether.

The response does not demonstrate understanding of control groups.

Broad Area of Inquiry: **Developing and Evaluating Explanations**
Inquiry Construct 12: Use evidence to support and justify interpretations and conclusions or explain how the evidence refutes the hypothesis.

❹ Explain how the data in Data Table 2 supports or does not support (refutes) your prediction about how weevils affect EWM growth in a lake. Use specific evidence from Data Table 2 to explain and support your answer.

Scoring Guide

Score	Description
2	Response explains how the data support or do not support the prediction and cites at least one example.
1	Response provides a partial explanation as to how the data do or do not support the prediction.
0	Response does not contain any correct elements or is irrelevant.
Blank	No response

Training Notes:

A “yes” or “no” is not considered enough for a partial explanation.

SCORE POINT 2

❹

The data in Table 2 supports my evidence because the area with the most weevils also had the less EWM. The pond with 73 weevils (the expierienced site), had a lighter biomass of the EWM plant, at 21.32 g. The pond with less weevils, 32, had a higher biomass of the EWM plant, at 30.22 g.

The response identifies that the data support the prediction from page 1 (evidence taken as a transcription error, which is forgivable). Specific data is used from Data Table 2 to support the claim.

❶

If there are less weevils in a pond, there will be more EWM, and vice versa. I predict this because weevils kill the EWM, so if there are a lot of weevils, the EWM population will be small. If there are not a lot of weevils, the EWM will continue growing.

SCORE POINT 1

4

My prediction was partially correct, as a larger population of weevils more quickly kills EWM.

The response takes a stance on how the data supported the prediction made on page 1. No specific evidence is used for support.

1

I believe that as EWM populations grow, so will the weevil population and eventually the weevils will entirely knock out the EWM population.

SCORE POINT 0

❹

Data table two does not help with our prediction because it's talking about the weight of the plants. What we need to know is how many weevills we have and if the killing the EWM.

The response does not demonstrate understanding of the information in Data Table 2 and how it relates to the experiment. Lower EWM weight would support the contention that weevils are killing it.

❶

I think that If theirs alot EWM in a lake obviously you need more weevills So you contacte some weevills from other lakes that have no EWM and put the weevills in lakes that need them.

Broad Area of Inquiry:	**Formulating Questions and Hypothesizing**
Inquiry Construct 1:	Analyze information from observations, research, or experimental data for the purpose of formulating a question, hypothesis, or prediction.

5 Use what you have learned in this task to write a prediction about the relationship among the number of sunfish, the number of weevils, and the growth of EWM in a lake. Use evidence to explain your prediction.

Scoring Guide

Score	Description
2	Response states a reasonable prediction about the relationship among sunfish-weevils-EWM, with explanation.
1	Response states a prediction about the relationship among sunfish-weevils-EWM with incomplete explanation.
0	Response does not contain any correct elements or is irrelevant.
Blank	No response

Training Notes:

Response can still receive a “1” if it only addresses 2 of the 3 species.

While the expected response is “more sunfish lead to less weevils and more EWM,” “sunfish don’t affect EWM growth” and “more sunfish lead to less EWM” are both acceptable. (Prediction does not have to be “correct” since the students have not done any experiments at this point.) However, prediction should be reasonable and related to sunfish, weevils, and EWM.

Score Point 2

❺

My prediction is w/ the sunfish there will be even more EWM, b/c the Sunfish will eat a lot of the weevils, so there won't be many weevils left to destroy the EWM, so there will be more EWM.

A reasonable prediction is made about the relationship between sunfish, EWM, and weevils. The prediction is explained well using food chain relationships.

Score Point 1

❺

If sunfish eat weevils than there will be less weevils and EWM in the lakes.

A reasonable prediction is made, but no explanation is given.

Score Point 0

❺

Well, if the weevil's predators are sunfish, go where sunfish don't. They usually keep away from the deeper areas, so if yo start out in the deeper waters, and work your way in, then maybe less will be eaten.

The response does not demonstrate understanding. No prediction is made about the effect that sunfish will have on the weevil and EWM populations.

Broad Area of Inquiry:	**Planning and Critiquing of Investigations**
Inquiry Construct 5:	Develop an organized and logical approach to investigating the question, including controlling variables.

6 The scientists hypothesized that sunfish predation would decrease the number of weevils in a lake and therefore increase the amount of EWM in the lake. Was their experiment a fair test of this hypothesis? Provide examples to support your answer and explain your reasoning.

Scoring Guide

Score	Description
3	Response takes a position on whether the test was or was not fair. The response provides at least one example that thoroughly supports its stance. The response clearly and thoroughly explains its reasoning.
2	Response takes a position on whether the test was or was not fair. The response provides at least one example that generally supports its stance. The response generally explains its reasoning.
1	Response takes a position on whether the test was or was not fair. The response may or may not provide an example(s) that minimally supports its stance. The response may or may not provide reasoning.
0	Response does not contain any correct elements or is irrelevant.
Blank	No response

Training Notes:

A "yes" or "no" is not considered enough for a partial explanation.

Examples that indicate the test is **fair**:
The test contains multiple trials (cages).
Only one thing (open/closed cages) is changed during the test.
The same things (cages/EWM amount) are used throughout the test.
The same procedure is followed throughout the test.
The cages were in the same location and at the same depth.
The scientists harvested the EWM stems randomly.
Any other plausible examples

Examples that indicate the test is **unfair**:
Smaller fish could have entered the cage.
The cages may have received different amounts of sunlight.
The fish may have preferred weevils, which were inside of cages.
Any other plausible examples

Reasons need to be explained for a thorough understanding.

SCORE POINT 3 (EXAMPLE A)

❻

The scientist's experiment of how sunfish affected the weezils affecting the growth of milfiol in the lake was fair. I belive this because they had a contrtol (area tested, depth, amount of milfoil) and a varible (whether sunfish could get to the weevils or not) and kept these throughout the experiment so yes it was fair.

The response takes a position (it was a fair test), and clearly explains its reasoning (there were many controls, but there was only one variable—open/closed cages).

SCORE POINT 3 (EXAMPLE B)

❻

No- it was not a fair test.
First of all, some sunfish could still get into the closed cages and feed on the weevils, which defeated the purpose of a closed cage. Therefore, there was not a control - a site where there were no sunfish. Also, they harvested random EWM stems from 10% of the area, instead of testing more of the area to get a more accurate number.

The response takes a position (it was not fair), and clearly explains its reasoning (small fish could still enter the closed cages, only 10% of area harvested).

Score Point 2

6

They did not do a fair test. In the open cages, any fish could get in. That part was fair. With the closed cages, Sunfish smaller than 6 inches could get in. This messed up the whole experiment, because fish could get into all cages.

The response takes a position (it was not fair), and generally explains its reasoning (sunfish smaller than 6 in. could get into closed cages).

Score Point 1

6

I think it was a fair test, there were 2 years to conducts the experiment, there were more than one cage, they had one open, one not.

The response takes a position (it was fair) and lists a couple of reasons why it was fair. It is unclear how the reasons show that the test was fair based on the level of explanation.

Score Point 0

❻

No there hypothesis was not correct. On graph 2 you can tell this because the open cage in 2000 is 0.13 and the closed cage is 0.20. and in 2001 the open cage is 0.05 and the closed cage is 0.17. This shows that when the weevils are effected more EWM.

The response does not address the question.

Broad Area of Inquiry: Conducting Investigations
Inquiry Construct 10: Summarize results based on data.

❼ What conclusions can you make about the relationship among the number of sunfish, the number of weevils, and the growth of EWM in a lake? Use data from Graph 1, Graph 2, and Graph 3 to support your conclusions.

Scoring Guide

Score	Description
3	Response draws a conclusion about the relationship among the number of sunfish, the number of weevils, and EWM growth. Response uses data from Graphs 1, 2, and 3 to thoroughly support the conclusion.
2	Response draws a conclusion about the relationship among the number of sunfish, the number of weevils, and/or EWM growth. Response uses data from Graphs 1, 2, and/or 3 to generally support the conclusion.
1	Response draws a conclusion about the relationship between the number of sunfish, the number of weevils, and/or EWM growth **or** response may use data from Graphs 1, 2, and/or 3 to minimally describe the relationship.
0	Response does not contain any correct elements or is irrelevant.
Blank	No response

Training Notes:

If the response is unexpected, with no data, no credit can be given because it cannot be determined whether response demonstrates logical thinking.

While the expected response is “more fish means less weevils means more EWM,” conclusions with “less EWM” are acceptable because the data in Graph 3 year 2000 suggest less EWM growth.

Similarly, the conclusion that “no conclusions can be drawn about EWM growth” is also acceptable, since one year there was less growth and one year there was more growth. In all cases, consider the response’s use of data when deciding if response’s conclusions are valid.

SCORE POINT 3

❼

The population of sunfish in a lake decrease the number of weevil's. In Graph 1 it shows that there were 0.4 to 0.5 sunfish in the closed cages and 0.7 to 0.8 in the open. Then in graph 2 it shows how the population of weevil's decreased. In the open cages it went from 0.12 down to 0.05. Since there were more sunfish in the open cages there are less weevil's. In graph 3 it shows in the open cages that the biomass of the Ewm increases because their are less weevil. Therefor, more sunfish leads to less weevil which means more Ewm.

The response clearly draws a conclusion (more sunfish leads to less weevils, which means more EWM), and uses data from all three graphs to thoroughly support its conclusion.

Score Point 2

❼

After seeing all the graphs, I can come to the conclusion that the relationship between the number of sunfish, weevils, and growth of EWM, is in fact very strong. Graph 1 shows that closed cages let in less sunfish, which resulted in more weevils living on each EWM Plant, shown in graph two, leading in the EWM plants having smaller Biomasses, shown in Graph 3.

The response generally draws a conclusion (the relationship between the three populations is very strong), and discusses two graphs to generally support its conclusion.

Score Point 1

❼

What I can conclude is the more sunfish, the less weevils. The less weevils the more EWM. I can also conclude the opposite. The less sunfish the more weevils. The more weevils the less EWM.

The response draws a conclusion (more sunfish, less weevils, more EWM; less sunfish, more weevils, less EWM). The response does not support its conclusion with any information from the graphs.

Score Point 0

❼

All three of them depend on eachother.

The conclusion is too vague to score without any further discussion.

Broad Area of Inquiry: **Developing and Evaluating Explanations**
Inquiry Construct 13: Communicate how scientific knowledge applies to explain results, propose further investigations, or construct and analyze alternative explanations.

8 What advice could Lenore and the other ecology club members give to ecologists to help control EWM in Two Island Lake? Use specific data and evidence to support the advice.

Scoring Guide

Score	Description
2	Response advises adding weevils to the lake and/or controlling the fish population in order to control the EWM in the lake. Refers to information from the investigation to support the advice.
1	Response advises adding weevils to the lake and/or controlling the fish population in order to control the EWM in the lake.
0	Response does not contain any correct elements or is irrelevant.
Blank	No response

Training Notes:

No points given to suggestions that are not related to the investigation (poison, relocation, etc.)

SCORE POINT 2

8

The advice I would give Lenore and other ecology members would be not to put sunfish in the lake. They should add weevils instead. Weevils will kill and help control the EWM population. In the 1st experiment, adding more weevils to the lake proved that the biomass of EWM had decreased.

The response gives a good piece of advice (add weevils, not sunfish) and supports the advice with evidence from the investigation.

Score Point 1

8

Some advice she could give them to control the EWM is add more weevils into the water. And keep the sunfish out of the lake

The response provides a good piece of advice, but does not support the advice with information from the investigation.

Score Point 0

8

The kind of advice Lenore and the other ecology club members could've given was that they could've been testing it to see whats it like with the opened and closed cages

The response does not provide a relevant piece of advice.