



**Science Grade 8
Scoring Guide for
Released Item #42
Mice
Fall 2006**



ANSWER THE FOLLOWING CONSTRUCTED-RESPONSE ITEM IN YOUR ANSWER DOCUMENT.

**42 Constructed Response
(3 points)**

The scientist performs the experiment again, under identical conditions and using the same field mice. The data from the second experiment are recorded in the table below.

Mouse	Sunflower Seeds	Strawberries	Rice	Walnuts	Blackberries
A	3	1	5	4	2
B	3	2	5	4	1
C	3	2	5	4	1
D	3	1	5	4	2

(The number 1 indicates which food each mouse ate first, 2 indicates the second type of food, etc.)

- Explain why it is important for a scientist to perform an experiment more than once.
- Explain how the second set of data is similar to the first set of data.
- Explain why it is important to keep the conditions the same when performing an experiment again.

NOTHING WRITTEN IN THIS TEST BOOKLET WILL BE SCORED.

Science Rubric for Mice Experiment

Sample Responses:

1. It is important to perform an experiment more than once to verify that the results are accurate or reliable and/or there was no error present in the experimental design.
2. a) The second set is consistent with the first set. In both experiments the mice preferred berries to the other foods offered.
OR
 b) In both experiments the mice ate berries first, seeds second, nuts third and rice last.
OR
 c) In both experiments the mice ate the food in the same order of preference.
3. a) Otherwise you might get inaccurate/different results.
OR
 b) Changing the conditions could affect the outcome and invalidate your results.
OR
 c) Keep the conditions the same so it does not affect the outcome/change your results.

Scoring Guide:

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|-----------------|---|
| 3 points | The student correctly explains why it is important to perform an experiment more than once; Explains how the second set of data is similar to the first set and Why it is important to keep the conditions the same when performing the experiment again. |
| 2 points | The student correctly explains why it is important to perform an experiment more than once and why it is important to keep conditions the same when performing the experiment again.
OR
The student correctly explains why it is important to perform an experiment more than once and how the second set of data is similar to the first set.
OR
The student correctly explains how the second set of data is similar to the first and why it is important to keep the conditions the same when performing the experiment again. |
| 1 point | The student correctly explains why it is important to perform an experiment more than once.
OR
The student correctly explains how the second set of data is similar to the first.
OR
The student explains why it is important to keep the same conditions when repeating the experiment. |
| 0 points | The student fails to understand the task. |

Anchor Paper 1 – Score Point 3

3 points

It is important to experiment more than once so that you can be certain that your data is correct. The second set of data is similar to the first because most of the mice ate berries first and second, sunflower seed third, walnuts fourth, and rice last. You should keep the conditions the same when experimenting again because you want to get the same data, answers, and all the other information. It's like double checking your work.

**Anchor Paper 1
Score Point 3**

The student correctly explains why it is important for a scientist to perform an experiment more than once (*so that you can be certain that your data is correct*), correctly explains how the second set of data is similar to the first set of data (*Most of the mice ate berries first and second, sunflower seed third, walnuts fourth, and Rice last*), and correctly explains why it is important to keep the conditions the same when performing an experiment again (*because you want to get the same data, answers and all the other information. It's like double checking your work*).

Anchor Paper 2 – Score Point 3

3 points

It is important for a scientist to perform an experiment more than once because you can get more accurate results the more times you perform an experiment by using an average from all of the experiments. The second set of data is similar to the first set of data because most field mice picked berries first, then ate seeds, then ate nuts, and then ate the rice. It's important to keep the conditions the same when performing an experiment again because if the conditions are different then the results will probably be different too.

**Anchor Paper 2
Score Point 3**

The student correctly explains why it is important for a scientist to perform an experiment more than once (*because you can get more accurate results the more times you perform an experiment by using an average from all of the experiments*), correctly explains how the second set of data is similar to the first set of data (*most field mice picked berries first, then ate seeds, then ate nuts, and then ate the rice*), and correctly explains why it is important to keep the conditions the same when performing an experiment again (*because if the conditions are different then the results will probably be different too*).

Anchor Paper 3 – Score Point 3

3 points

• It is important to do the experiment more than once because then you can compare your data.

• The data is similar because the mice went to the berries first then seeds, then walnuts, and last again rice.

• It is important to keep conditions the same because if you don't there could be a big change in your data.

**Anchor Paper 3
Score Point 3**

The student correctly explains why it is important for a scientist to perform an experiment more than once (*because then you can compare your data*), correctly explains how the second set of data is similar to the first set of data (*the mice went to the berries first then seeds, then walnuts, and last again rice*), and correctly explains why it is important to keep the conditions the same when performing an experiment again (*because if you don't there could be a big change in your data*).

Anchor Paper 4 – Score Point 3

3 points

It is extremely important for a scientist to perform an experiment more than once. You must make sure your first experiment was not just a fluke. If you come up with about the same data everytime, you know you did the experiment correctly. These two types of data are similar in many ways. All of the mice ate the rice last, the all ate some type of berries first and second. You want to keep the conditions the same otherwise you would be doing a different experiment.

**Anchor Paper 4
Score Point 3**

The student correctly explains why it is important for a scientist to perform an experiment more than once (*You must make sure your first experiment was not just a fluke. If you come up with about the same data everytime, you know you did the experiment correctly*), correctly explains how the second set of data is similar to the first set of data (*All of the mice ate the rice last, the all ate some type of berries first and second*), and correctly explains why it is important to keep the conditions the same when performing an experiment again (*otherwise you would be doing a different experiment*).

Anchor Paper 5 – Score Point 3

3 points

Scientists should perform experiments more than once because any results in the first trial could dramatically change. They need to find similar data. They ate most of the food in t same order. Conditions for an experiment should always be the same because results could change if the conditions were not the same.

Anchor Paper 5 Score Point 3

The student correctly explains why it is important for a scientist to perform an experiment more than once (*because any results in the first trial could dramatically change*), correctly explains how the second set of data is similar to the first set of data (*They ate most of the food in t same order*), and correctly explains why it is important to keep the conditions the same when performing an experiment again (*because results could change if the conditions were not the same*).

Anchor Paper 6 – Score Point 2

3 points

It is important for a scientist to perform an experiment more than once so that the scientist can be sure of his results.

The second set of data is similar to the first set of data because every field mouse basically has the same diet as they did on the first test.

It is important to keep the conditions the same when performing an experiment again because it could affect how the field mice eat.

**Anchor Paper 6
Score Point 2**

The student correctly explains why it is important for a scientist to perform an experiment more than once (*so that the scientist can be sure of his results*) and correctly explains why it is important to keep the conditions the same when performing an experiment again (*because it could affect how the field mice eat*). The explanation for how the second set of data is similar to the first set of data, “...every field mouse basically has the same diet as they did on the first test,” is not acceptable. This statement indicates that the field mice ate the same food in both tests but does not address the order the foods were eaten. Compare with Anchor Paper 5.

Anchor Paper 7 – Score Point 2

3 points

It is important because sometimes they turn out different. The second set has the same numbers and is similar to number one, because in an experiment anything can go wrong and it is more accurate.

Anchor Paper 7 Score Point 2

The student correctly explains why it is important for a scientist to perform an experiment more than once (*because sometimes they turn out different*) and correctly explains why it is important to keep the conditions the same when performing an experiment again (*because in an experiment anything can go wrong and it is more accurate*). The explanation for how the second set of data is similar to the first set of data, *“The second set has the same numbers and is similar to number one,”* is not acceptable because it does not indicate that the numbers represent the order the foods were eaten.

Anchor Paper 8 – Score Point 2

3 points *Because you don't know if there is a flaw in the first experiment. The scientist is using the same mice and conditions, so that your data doesn't change.*

Anchor Paper 8 Score Point 2

The student correctly explains why it is important for a scientist to perform an experiment more than once (*Because you don't know if there is a flaw in the first experiment*) and correctly explains why it is important to keep the conditions the same when performing an experiment again (*So that your data doesn't change*). The explanation for how the second set of data is similar to the first set of data, "*The scientist is using the same mice and conditions,*" is not acceptable because as a repeat of prompt information it does not address the order the foods were eaten.

Anchor Paper 9 – Score Point 2

3 points

Because there is always different results for the same Experiment

Its similar because only 1 animal changed its sequence of Order

Because a Scientist would want to keep the same habitat and the same food so it wont affect the way the mices choose

**Anchor Paper 9
Score Point 2**

The student correctly explains how the second set of data is similar to the first set of data (*It is similar because only 1 animal changed its sequence of order*), and correctly explains why it is important to keep the conditions the same when performing an experiment again (*so it wont affect the way the mices choose*). The explanation of why it is important for a scientist to perform an experiment more than once, "*Because there is always different results for the same Experiment,*" is unacceptable because it is an absolute statement that the results will be different each time an experiment is repeated.

Anchor Paper 10 – Score Point 2

3 points	<ul style="list-style-type: none">• to see if it is dumb luck• mouse B is the only one who changes• different conditions, different answers
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Anchor Paper 10 Score Point 2

The student correctly explains why it is important for a scientist to perform an experiment more than once (*to see if it is dumb luck*). The student also correctly explains why it is important to keep the conditions the same when performing an experiment again (*different conditions, different answers*). The explanation of how the second set of data is similar to the first set of data, *“Mouse B is the only one who changes,”* is unacceptable because it does not address the order the foods were eaten. Compare with Anchor Paper 9.

Anchor Paper 11 – Score Point 1

3 points to make sure their observations are correct.

B. because all the mice went for the rice and walnuts.

C. so they know where the food is.

Anchor Paper 11 Score Point 1

The student correctly explains why it is important for a scientist to perform an experiment more than once (*to make sure their observations are correct*). The explanation for how the second set of data is similar to the first set of data, "*because all the mice went for the rice and walnuts,*" is incorrect. The explanation of why it is important to keep the conditions the same when performing an experiment again, "*so they know where the food is,*" is unacceptable because it falls short of answering the question. A statement such as this, involving behavior of the mice, must contain an explanation of how that behavior would affect the experiment in order to receive credit. For example, you need to keep the conditions the same so the mice can find the food, otherwise your data may be different. Compare with Anchor Papers 6 and 9.

Anchor Paper 12 – Score Point 1

3 points *to see if there were any goofs*
• Almost same # same animal
• because it could change your results

Anchor Paper 12 Score Point 1

The student correctly explains why it is important for a scientist to perform an experiment more than once (*to see if there were any goofs*). The explanation for how the second set of data is similar to the first set of data, *“Almost same # same animal,”* is not acceptable because it does not indicate that the numbers represent the order the foods were eaten. The explanation of why it is important to keep the conditions the same when performing an experiment again, *“because it could change your results,”* is incorrect. This statement incorrectly indicates that keeping the conditions the same would cause the results to change. Compare with acceptable responses in Anchor Papers 1 and 8 (conditions the same, same data) and Anchor Papers 2, 3, 5, and 10 (different conditions, different data).

Anchor Paper 13 – Score Point 1

3 points to make sure he has it right that why he did it twice because it was similar. You don't want to mess up your conclusion.

**Anchor Paper 13
Score Point 1**

The student correctly explains why it is important for a scientist to perform an experiment more than once (*to make sure he has it right, that why he did it twice because it was similar. You don't want to mess up you conclusion*). Since it is not clear if the response attempts to address more than one part of the question, no additional credit is awarded.

Anchor Paper 14 – Score Point 0

3 points It's important for the Scientist to perform an experiment more than once, because the solutions are always different. Most of the field mice ate sunflower seeds, rice, and Walnuts about the same, so you can get different outcomes.

Anchor Paper 14 Score Point 0

The student fails to understand the task. The explanation of why it is important for a scientist to perform an experiment more than once, "...because the solutions are always different," is unacceptable because it is an absolute statement that the results will be different each time an experiment is repeated. The explanation of how the second set of data is similar to the first set of data, "Most of the field mice ate sunflower seeds, rice, and Walnuts about the same," is unacceptable. This statement incorrectly suggests that the mice ate the strawberries and blackberries differently in the two tests and does not address the order the foods were eaten. The explanation of why it is important to keep the conditions the same when performing an experiment again, "so you can get different outcomes," is incorrect. This statement incorrectly indicates that keeping the conditions the same would cause the results to change. See Anchor Paper 12.

