



**NEW ENGLAND
COMMON ASSESSMENT PROGRAM**

**Practice Test Science Inquiry Task
Scoring Guide
2008**

**Grade 8
Rainy Morning**

**GRADE 8
PRACTICE TEST SCIENCE INQUIRY TASK
SCORING GUIDE**

The prediction items completed while students are in cooperative work groups are not scored. In your classroom, you may use the rubrics below and on the next page if you would like to score Predictions A and B. The predictions can be found on page 2 in the **Task Booklet**.

Use the rubrics below and on the next page if you wish to score the predictions. Rubrics for items in the Student Answer Booklet begin on page 3.

Prediction A	Point Range: 0–2	Inquiry Construct: 1	DOK: 2
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Prediction A:

Using Ethan’s experience and your understanding of force and the motion of objects, predict **how the mass of a parked car will affect the distance the parked car moves when hit**. Explain your answer.

Scoring Guide:

Score	Description
2	Response includes a prediction that is reasonable in terms of available evidence. AND Response includes an explanation of a cause-and-effect relationship between the mass of a parked car and the distance the parked car will move when hit. AND Response includes evidence from the story or other scientific information to support the prediction. There are no errors or omissions.
1	Response includes a prediction that is reasonable in terms of available evidence but does not include an explanation. OR Response includes an explanation of a cause-and-effect relationship between the mass of a parked car and the distance the parked car will move when hit, but response does not include a prediction. There may be errors or omissions, but response is relevant to the question being asked.
0	Response is not relevant to the question being asked. OR There is no response.

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Prediction B	Point Range: 0–2	Inquiry Construct: 1	DOK: 2
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Prediction B:

Using Ethan’s experience and your understanding of force and the motion of objects, predict **how the slope of a hill will affect the distance moved by a car that gets hit**. Explain your answer.

Scoring Guide:

Score	Description
2	<p>Response contains a prediction that is reasonable in terms of available evidence.</p> <p>AND</p> <p>Response includes an explanation of a cause-and-effect relationship between the slope of a hill and the distance moved by a car that gets hit.</p> <p>AND</p> <p>Response includes evidence from the story or other scientific information to support the prediction.</p> <p>There are no errors or omissions.</p>
1	<p>Response includes a prediction that is reasonable in terms of evidence but does not include an explanation.</p> <p>OR</p> <p>Response includes an explanation of a cause-and-effect relationship between the slope of a hill and the distance moved by a car that gets hit, but response does not include a prediction.</p> <p>There may be errors or omissions, but response is relevant to the question being asked.</p>
0	<p>Response is not relevant to the question being asked.</p> <p>OR</p> <p>There is no response.</p>

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Item Number: 1	Point Range: 0–3	Inquiry Construct: 8	DOK: 2
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1. Use the information from the data tables on page 2 to construct **one** graph. Graph the relationships of the average distances to the slopes of the hill for the small- and large-mass cars. Make sure to title your graph.

Scoring Guide:

Score	Description
3	Response is a graph that accurately represents the data on page 2 in the Student Answer Booklet. AND Response (graph) includes all of the following graph elements: a title, labels, and a correct scale. There are no errors or omissions.
2	Response is a graph that accurately represents the data on page 2 in the Student Answer Booklet. AND Response (graph) includes selection of a scale appropriate to the range of data collected. OR Response (graph) includes the following graph elements: a title and labels.
1	Response is a graph that displays data but omits required components. OR Response (graph) includes selection of a scale appropriate to the range of data collected. OR Response (graph) includes the following graph elements: a title and labels. OR Response (graph) indicates limited understanding of representing data in a graph.
0	Response (graph) does not represent data accurately, uses an incorrect scale, and lacks a relevant title.

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Item Number: 2	Point Range: 0–2	Inquiry Construct: 10	DOK: 2
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2. How does the mass of a parked car affect the distance it moves when hit? Be sure to use **your data** to explain your answer.

Scoring Guide:

Score	Description
2	Response shows evidence of ability to summarize results based on data. AND Response includes an explanation and uses data from the investigation to support the explanation. There are no errors or omissions.
1	Response shows evidence of ability to summarize results based on data. OR Response includes an explanation and uses data from the investigation to support the explanation. There are errors or omissions, but response is relevant to the question being asked.
0	Response shows no evidence of ability to summarize results based on data. AND Response does not include an explanation or the explanation provided is incorrect or irrelevant. AND Response omits supporting data.

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Item Number: 3	Point Range: 0–2	Inquiry Construct: 10	DOK: 2
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3. How does the **slope of the hill** affect the distance a parked car moves after it is hit? Be sure to use **your data** to explain your answer.

Scoring Guide:

Score	Description
2	Response shows evidence of ability to summarize results based on data. AND Response includes an explanation and uses data from the investigation to support the explanation. There are no errors or omissions.
1	Response shows evidence of ability to summarize results based on data. OR Response includes an explanation and uses data from the investigation to support the explanation. There are errors or omissions, but response is relevant to the question being asked.
0	Response shows no evidence of ability to summarize results based on data. AND Response does not include an explanation or the explanation provided is incorrect or irrelevant. AND Response omits supporting data.

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Item Number: 4	Point Range: 0–2	Inquiry Construct: 2	DOK: 2
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4a. Look at your Prediction A on page 2 in your Task Booklet. Does your data support your prediction?

Yes

No

4b. Explain how your data and observations do or do not support your Prediction A.

Scoring Guide:

Score	Description
2	<p>Response includes an answer in the Yes/No check boxes. AND Response includes an explanation that uses data to support or refute the relationship between the mass of a parked car and the distance the parked car will move when hit. AND The explanation is consistent with the answer in the Yes/No check boxes. There are no errors or omissions.</p>
1	<p>Response includes an explanation that uses data to support or refute the relationship between the mass of a parked car and the distance the parked car will move when hit. OR The explanation is consistent with the answer in the Yes/No check boxes. There are errors or omissions, but response is relevant to the question being asked.</p>
0	<p>Response does not include an explanation that uses data to support or refute the relationship between the mass of a parked car and the distance the parked car will move when hit. AND The explanation is not consistent with the answer in the Yes/No check boxes. AND Response omits supporting data.</p>

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Item Number: 5	Point Range: 0–2	Inquiry Construct: 2	DOK: 2
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5a. Look at your Prediction B on page 2 in your Task Booklet. Does your data support your prediction?

Yes

No

5b. Explain how your data and observations do or do not support your Prediction B.

Scoring Guide:

Score	Description
2	<p>Response includes an answer in the Yes/No check boxes. AND Response includes an explanation that uses data to support or refute the relationship between the slope of a hill and the distance moved by a car that gets hit. AND The explanation is consistent with the answer in the Yes/No check boxes. There are no errors or omissions.</p>
1	<p>Response includes an explanation that uses data to support or refute the relationship between the slope of a hill and the distance moved by a car that gets hit. OR The explanation is consistent with the answer in the Yes/No check boxes. There are errors or omissions, but response is relevant to the question being asked.</p>
0	<p>Response does not include an explanation that uses data to support or refute the relationship between the slope of a hill and the distance moved by a car that gets hit. AND The explanation is not consistent with the answer in the Yes/No check boxes. AND Response omits supporting data.</p>

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Item Number: 6	Point Range: 0–3	Inquiry Construct: 13	DOK: 3
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6. Think about what you learned in this investigation and what you know about force and motion. Predict what might happen if a moving car (represented by the battery) on a **flat, dry** surface hit a stationary object. Explain your answer.

Scoring Guide:

Score	Description
3	Response proposes a prediction for further investigation of what will happen on a flat, dry surface. AND Response uses experimental results to explain what will happen. There are no errors or omissions.
2	Response proposes a prediction for further investigation of what will happen on a flat, dry surface. OR Response uses experimental results to explain what will happen. There may be errors or omissions.
1	Response is relevant to the question being asked but is minimal and incomplete. There are errors or omissions.
0	Response is not relevant to the question being asked. OR There is no response.

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Item Number: 7	Point Range: 0–2	Inquiry Construct: 11	DOK: 2
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7. Look at your prediction in **item 6**. Identify at least two variables and explain how each variable could influence the outcome of the collision.

Scoring Guide:

Score	Description
2	Response identifies two variables and includes an explanation of how each variable could influence the outcome of the collision. There are no errors or omissions.
1	Response identifies one variable and provides a relevant explanation of how the variable could influence the outcome of the collision. OR Response identifies two variables but includes no explanations. There may be errors or omissions, but response is relevant to the question being asked.
0	Response does not identify a variable. AND Response does not include an explanation.

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Item Number: 8	Point Range: 0–2	Inquiry Construct: 5	DOK: 2
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8. Design an investigation that uses models to test the prediction you made in item 6. List the procedure (steps) to guide your investigation. Be sure to include the variables that will be measured or controlled.

Scoring Guide:

Score	Description
2	Response describes a procedure that lists steps sequentially and logically. AND Response identifies variables that will be measured and controlled. There are no errors or omissions.
1	Response describes a procedure that lists steps sequentially and logically. OR Response identifies variables that will be measured and controlled. There may be errors or omissions.
0	Response does not include a procedure. AND Response does not identify variables that will be measured and controlled.

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Summary of Inquiry Constructs and Broad Areas of Inquiry

Broad Areas of Inquiry Constructs	Inquiry Constructs (Item Number)	DOK	Maximum Points
Formulating Questions and Hypothesizing 1, 2, 3	1 (Prediction A)*	2	(2)*
	1 (Prediction B)*	2	(2)*
	2 (Item 4)	2	2
	2 (Item 5)	2	2
Planning and Critiquing of Investigations 4, 5, 6	5 (Item 8)	2	2
Conducting Investigations 7, 8, 9, 10	8 (Item 1)	2	3
	10 (Item 2)	2	2
	10 (Item 3)	2	2
Developing and Evaluating Explanations 11, 12, 13	13 (Item 6)	3	3
	11 (Item 7)	2	2
Total Points for Task			18
*Optional Points for Predictions A and B			4