

STUDENT NAME \_\_\_\_\_  
(please print)

Grade  
**5**

# New Jersey Student Learning Assessment—Science (NJSLA—S) Practice Test

FORM  
**A**

Grade 5



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## Sample Items

This test booklet contains several different types of test questions. See the samples below, which will help you understand how to respond to each question type.

Record/mark your answers by circling the answer in the test booklet. If you need to change an answer, be sure to erase your first answer completely. **Only the answers you write in your test booklet will be scored.**

One of the questions will ask you to write a response. Write your response in the box provided in the test booklet. Be sure to keep your response within the provided space. Only responses written within the provided space will be scored.

### Sample Item 1. Multiple-Choice (Select one answer.)

Which claim about the Sun is accurate?

- A. The Sun appears smaller and brighter than other stars because it is the closest star to Earth.
- B. The Sun appears larger and brighter than any other star because it is the closest star to Earth.
- C. The Sun appears larger and less bright than other stars because it is the farthest star from Earth.
- D. The Sun appears smaller and less bright than any other star because it is the farthest star from Earth.

### Sample Item 2. Multi-Select (Select multiple answers.)

Select **two (2)** answers for this item. The risk of an earthquake happening is **higher**

- A. in the South than in Alaska.
- B. on the West Coast than in the Northeast.
- C. on the East Coast than on the West Coast.
- D. in Alaska than in the center of the country.
- E. in the center of the country than on the West Coast.

**Sample Item 3. Multi-Select Box Item** (Select one answer for each box.)

A student claims that a soccer ball has less energy after it hits a wall. Select the correct word from each box to complete the statement that explains why this claim is true.

When a soccer ball hits the wall, **Y** of the soccer ball's energy is transferred to the air in the form of **Z**.

**Y**

- A.** all
- B.** some
- C.** none

**Z**

- A.** light
- B.** sound

**Sample Item 4. Constructed Response** (Write out your answer.)

Many New Jersey towns have started programs to reduce the amount of traffic on roads as a means to help improve air quality. Give **two (2)** examples of programs that would help reduce traffic and improve air quality.

**Answers to Sample Questions**

1. A **(B)** C D
2. A **(B)** C **(D)** E
3. **Y**  
A **(B)** C  
**Z**  
A **(B)**

4. Carpooling is one means to reduce the number of cars on the roads. Using public transit when available would also decrease the number of individual cars. Both of these measures would help improve air quality.



# Unit 2 Practice Test

**Directions:**

Today you will take Unit 2 of the Grade 5 New Jersey Student Learning Assessment-Science (NJSLA-S) Practice Test.

Read each question. Then, follow the directions to answer each question. Circle the answer or answers you have chosen in your test booklet. If you need to change an answer, be sure to erase your first answer completely.

If a question asks you to show or explain your work, you must do so to receive full credit. Only responses written within the provided space will be scored.

If you do not know the answer to a question, you may go on to the next question. If you finish early, you may review your answers and any questions you did not answer in this unit **ONLY**. Do not go past the stop sign.



**Use the information below to answer questions 1-2.**

When water changes from a liquid to a solid, some properties of the water may change.

Students conduct an investigation in a classroom on the effects of temperature change on water. Figure 1 shows a plastic bag containing cold water. It is placed in a freezer. The bag, which holds 100 milliliters of water, is cooled in a freezer for 24 hours.



**Figure 1. Frozen Water in Plastic Bag**

The volume and weight of the water in the bag are measured every 6 hours for 24 hours. The data are shown in Table 1.

**Table 1. Volume and Weight of Water in Freezer**

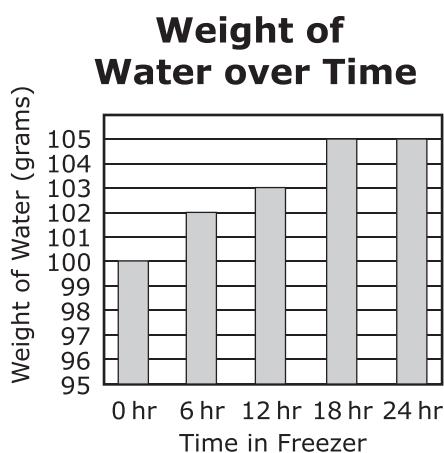
Time (hr)	Volume (mL)	Weight (g)
0	100	100
6	102	100
12	103	100
18	105	100
24	105	100

1. This item has two parts. First, answer Part A. Then answer Part B.

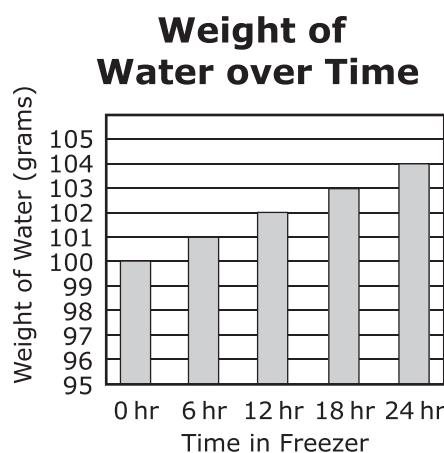
**Part A**

Using Table 1, select the option that shows the weight of the water for each 6-hour period.

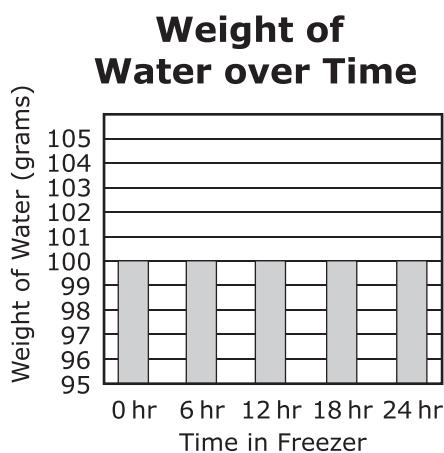
A.



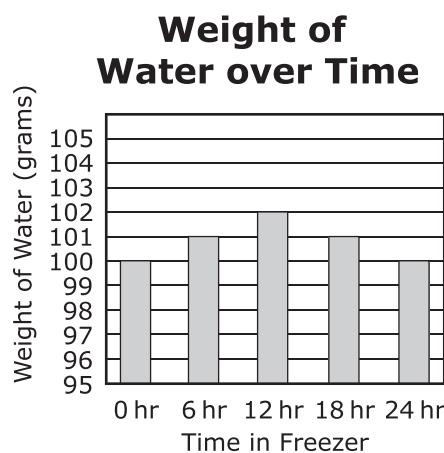
B.



C.



D.



(Item 1 continued)

### Part B

Describe the pattern in the weight of the water over time.

Complete the sentence by choosing the correct answer from the box.

The weight of the water **Z**.

#### Box Z

- A.** decreases
- B.** increases
- C.** remains the same

**2.** Students want to conduct a new investigation using a larger bag of water. Using Table 1, predict the weight of 300 grams of water after 72 hours.

Complete the sentences by choosing the correct answer from each box.

In the new investigation, the weight of water is predicted to be **Y** grams after 72 hours. This demonstrates that **Z** in a system over time.

#### Box Y

- A.** 300
- B.** 315
- C.** 600
- D.** 900

#### Box Z

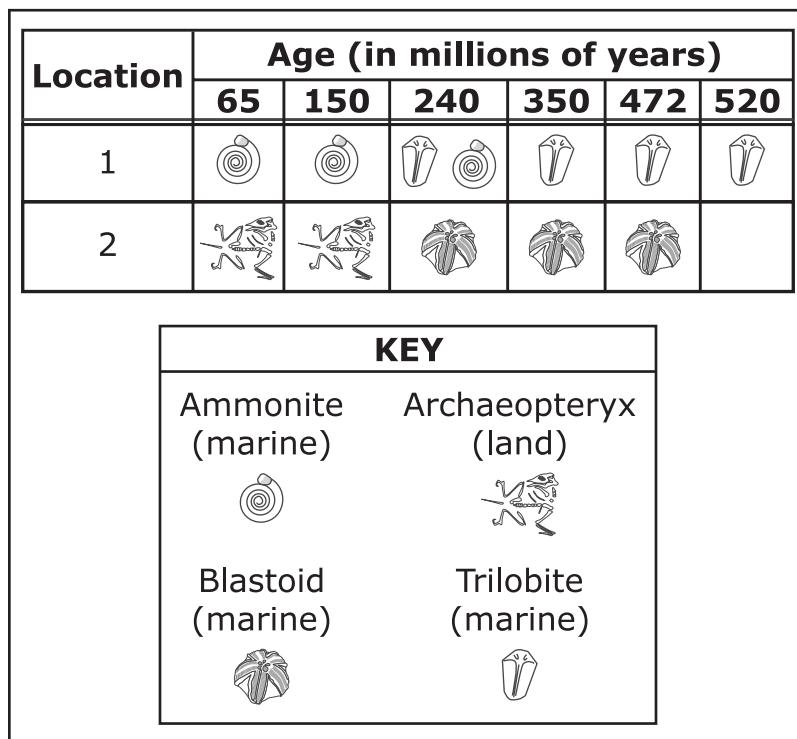
- A.** weight of matter is conserved
- B.** weight can increase
- C.** volume is conserved

**Use the information below to answer questions 3-6.**

Four types of fossils of extinct species are found in two locations.

Paleontologists can gather important information about organisms from these species and the environment in which they lived.

Figure 1 shows the types of fossils that were found at each location and the time period when the species of the organisms that created the fossils lived. The key indicates if each organism lived in a marine or land environment.



**Figure 1. Ages of Fossil Types in Two Locations**

**GO ON TO NEXT PAGE**

3. This item has two parts. First, answer Part A. Then answer Part B.

**Part A**

Using Figure 1, calculate the approximate amount of time each species lived on Earth.

Select the option that correctly shows how long each species likely lived on Earth, from the shortest to the longest amount of time.

A.

Shortest Time	Archaeopteryx
	Ammonite
	Blastoid
Longest Time	Trilobite

B.

Shortest Time	Trilobite
	Blastoid
	Ammonite
Longest Time	Archaeopteryx

C.

Shortest Time	Trilobite
	Ammonite
	Blastoid
Longest Time	Archaeopteryx

D.

Shortest Time	Archaeopteryx
	Blastoid
	Ammonite
Longest Time	Trilobite

*(Item 3 continued)*

### Part B

Identify the organism that lived for the shortest amount of time and then determine the type of environment that organism inhabited.

Complete the sentence by choosing the correct answer from the box.

The organism that likely lived on Earth for the shortest time lived in a **Z** environment.

#### Box Z

- A.** marine
- B.** land

4. Scientists discovered two additional fossils, Fossil X and Fossil Y, at Location 1. The approximate ages of the fossils were determined and are shown in Table 1.

**Table 1. Additional Fossil Types: Location 1**

Fossil	Picture of Fossil	Age of Fossil (in millions of years)
X		50–present
Y		50–60

Based on Figure 1 and Table 1, describe how the environment changed at Location 1 over time.

Complete the sentence by choosing the correct answer from each box.

Based on fossil evidence, Location 1 changed to a **Y** environment **Z** million years ago.

**Box Y**

- A.** land
- B.** marine

**Box Z**

- A.** 50
- B.** 55
- C.** between 50–55
- D.** between 60–65

5. Based on Figure 1, identify which questions can be answered by analyzing the data.

Complete the table by choosing the correct answer from each box.

Question	Can or Cannot Be Answered
What was the environment at each location over time?	W
How did the climate change at each location over time?	X
How many fossils were found at each location over time?	Y
What types of fossils were found at each location over time?	Z

#### Box W

- A. Can be answered
- B. Cannot be answered

#### Box X

- A. Can be answered
- B. Cannot be answered

#### Box Y

- A. Can be answered
- B. Cannot be answered

#### Box Z

- A. Can be answered
- B. Cannot be answered

6. A student claims that the fossils at one of the locations provide evidence that the environment had changed. Identify the information that supports this claim.

Complete the sentence by choosing the correct answer from each box.

At Location **X**, the fossils of the **Y** show the area had species that **Z**.

**Box X**

- A.** 1
- B.** 2

**Box Y**

- A.** ammonite and trilobite
- B.** archaeopteryx and blastoid

**Box Z**

- A.** were both marine and terrestrial
- B.** survived over 400 million years

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**Use the information below to answer questions 7–10.**

Two cities can be across the world from each other, yet have very similar climates.

The climate of a city may be more similar to a city that is farther away than it is to a city that is closer.

The locations of eight cities around the world are shown on the map in Figure 1. The average temperatures and the average annual precipitation of the cities are shown in Table 1.



**Figure 1. Locations of Eight Cities around the World**

**Table 1. Climate Data for Eight Cities around the World**

City	Average High Temperature (°F)	Average Low Temperature (°F)	Precipitation (inches)
Adak	52	32	61
Richland	75	34	7
Needles	95	54	4
Los Angeles	75	57	16
Klaksvik	52	37	56
Athens	82	50	16
Tehran	81	37	9
Riyadh	95	57	4

7. Based on Table 1, select the option that shows cities that have been correctly paired with another city that has similar annual precipitation.

A. Adak and Riyadh

Richland and Tehran

Needles and Klaksvik

Los Angeles and Athens

B. Adak and Klaksvik

Richland and Tehran

Needles and Riyadh

Los Angeles and Athens

C. Adak and Athens

Richland and Klaksvik

Needles and Tehran

Los Angeles and Riyadh

D. Adak and Klaksvik

Richland and Athens

Needles and Riyadh

Los Angeles and Tehran

8. Which statement is **best** supported by the data?

A. Adak and Tehran are far from each other and have similar temperatures.

B. Needles and Riyadh are far from each other and have similar temperatures.

C. Needles and Riyadh are far from each other and have very different temperatures.

D. Needles and Richland are far from each other and have very different temperatures.

9. A student makes claims about which cities have climates that are very similar to each other. Based on Table 1, identify which claims are supported by the data.

Complete the table by choosing the correct answer from each box.

Claim	Supported or Not Supported by Data
Athens and Tehran, because they have the greatest amount of precipitation.	<b>W</b>
Adak and Klaksvik, because they have the same average high temperature.	<b>X</b>
Klaksvik and Tehran, because they have the same average low temperature.	<b>Y</b>
Richland and Los Angeles, because they have the lowest amount of precipitation.	<b>Z</b>

#### Box W

- A.** Supported by data
- B.** Not supported by data

#### Box X

- A.** Supported by data
- B.** Not supported by data

#### Box Y

- A.** Supported by data
- B.** Not supported by data

#### Box Z

- A.** Supported by data
- B.** Not supported by data

**GO ON TO NEXT PAGE**

10. Figure 2 shows the location of Newark, NJ, in relation to the other eight cities.



**Figure 2. Location of Newark, New Jersey, on World Map**

Table 2 shows the average climate data for Newark, NJ.

**Table 2. Climate Data for Newark, New Jersey**

Average High Temperature (°F)	Average Low Temperature (°F)	Precipitation (inches)
63	46	46

Compare the climate data of Newark to the other eight cities. Based on the data, identify the two cities that have a climate most similar to Newark and describe their climate.

*(Item 10 continued)*

Complete the sentences by choosing the correct answer from each box.

The two cities that have the most similar climate to Newark are **Y**. They are all similar because they all have **Z** conditions than other cities.

**Box Y**

- A.** Klaksvik and Adak
- B.** Los Angeles and Adak
- C.** Klaksvik and Richland
- D.** Los Angeles and Richland

**Box Z**

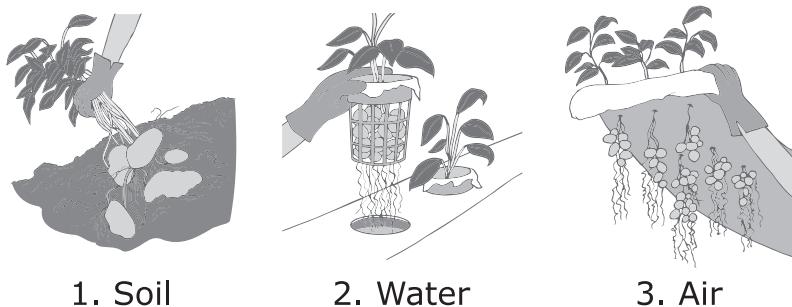
- A.** cooler and dryer
- B.** cooler and wetter
- C.** warmer and dryer
- D.** warmer and wetter

**Use the information below to answer questions 11-13.**

Potatoes are usually grown in soil, but some potatoes are able to grow without soil.

Potato plants were grown with three different methods as shown in Figure 1.

1. Soil: planted in pots with soil
2. Water: placed in pots with water and small stones added for support
3. Air: suspended in the air on platforms with holes to let the roots hang down



**Figure 1. Potato Plants Growing Methods**

For all three methods shown in Table 1, the potatoes were given water with nutrients added.

**Table 1. Data for Potatoes Grown by Different Methods**

Growing Method	Average Number of Potatoes per Plant	Average Weight per Potato (grams)	Total Weight per Plant (grams)
Soil	6.5	29	188.5
Water	6.5	12	78
Air	28	12	336

**11.** A student claims that potatoes can be successfully grown without soil. Based on Table 1, which statements **best** support this claim?

Select **two** of the five statements.

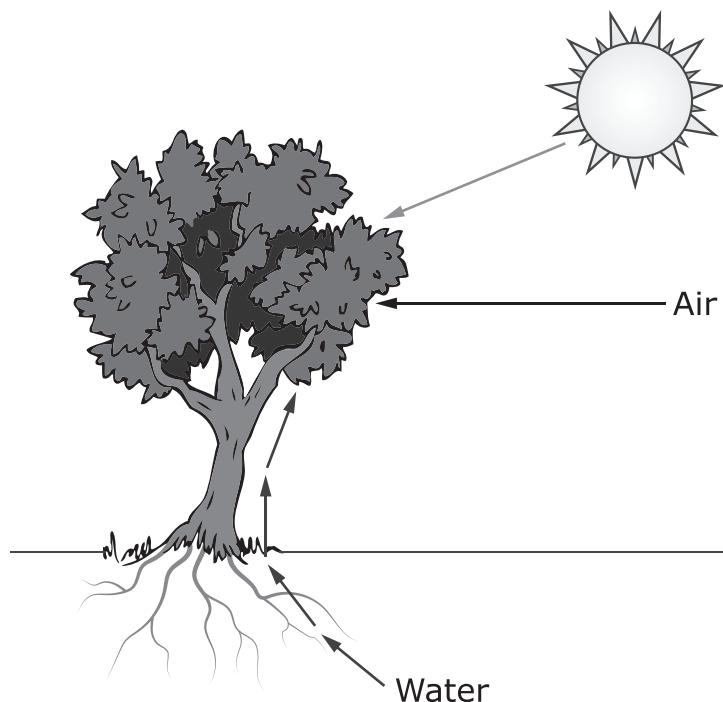
- A.** The heaviest potatoes were grown in soil.
- B.** The greatest number of potatoes were grown in air.
- C.** Both water and air produced the same average weight per potato.
- D.** Both soil and air produced plants with a greater total weight than water.
- E.** Both soil and water produced the same average number of potatoes per plant.

**12.** The soil was weighed at the beginning and end of the experiment. The weight did not change.

This is evidence that potato plants mainly get what they need for growth from the

- A.** soil only.
- B.** air and soil.
- C.** air and water.
- D.** water and soil.

13. Figure 2 shows how plants use their leaves to make food for growth in a natural environment.



**Figure 2. Tree Making Food**

Based on Figure 1 and Figure 2, explain what plants need in their natural environment for growth.

*(Item 13 continued)*

Complete the sentence by choosing the correct answer from each box.

In their natural environment, plants need the energy from **Y** in order to use **Z** to make their own food for growth.

**Box Y**

- A.** air
- B.** soil
- C.** water
- D.** sunlight

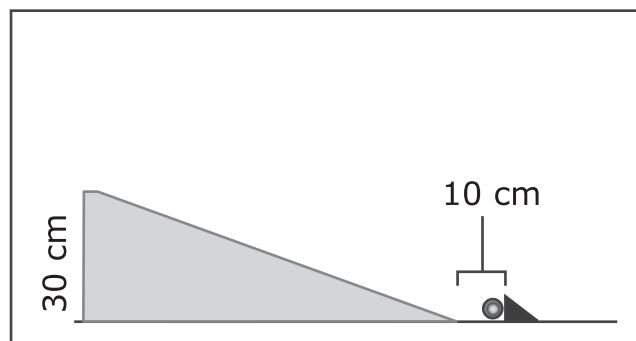
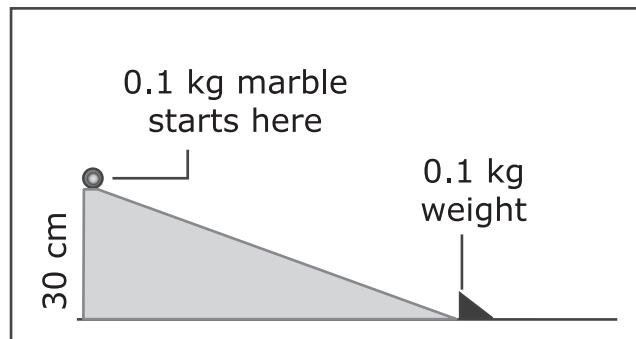
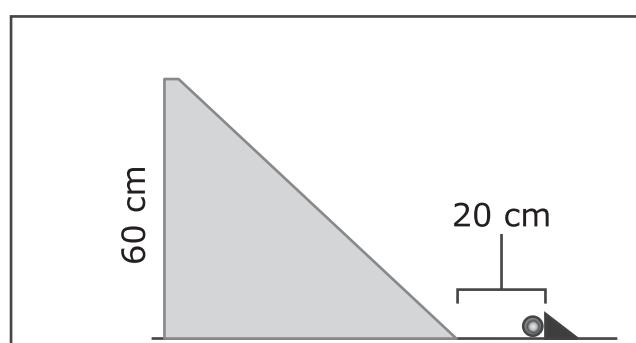
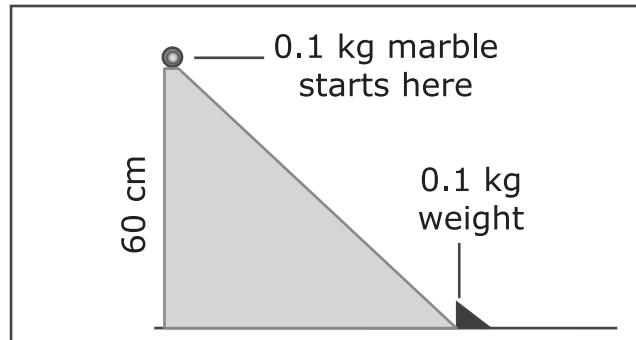
**Box Z**

- A.** soil and air only
- B.** soil and water only
- C.** water and air only
- D.** soil, water, and air

**Use the information below to answer questions 14-17.**

Marbles can roll down ramps at different speeds.

A classroom experiment consists of two investigations. Students roll the same marble down each of two ramps. The ramp used in Investigation 1 is 30 centimeters high; the ramp used in Investigation 2 is 60 centimeters high. When the marble comes to the end of each ramp, it collides with and pushes a 0.1 kilogram weight along the track.

**Investigation 1****Investigation 2****Figure 1. Marble Investigations**

**14.** Which questions could the students be attempting to answer based on the investigations shown?

Select **two** of the five questions.

- A.** Does changing the height of the ramp affect the speed of the marble?
- B.** Does changing the height of the ramp affect the weight of the marble?
- C.** Does changing the height of the ramp affect the path the marble takes?
- D.** Does changing the height of the ramp affect how far the 0.1 kg weight is pushed?
- E.** Does changing the height of the ramp affect where the 0.1 kg weight begins to move?

**15.** In Investigation 2, predict the results if the weight of the marble increases. Provide an explanation for the prediction.

**Enter your response in your answer document. Support your answer with information from the data.**

In Investigation 2, the height of the ramp and the marble remain the same. Predict the results if a 0.2 kg weight is used. Provide an explanation for the prediction.

**Enter your response in your answer document. Support your answer with information from the data.**

**16.** Describe the results of Investigations 1 and 2.

Complete the sentences by choosing the correct answer from each box.

In Investigation 1, the speed of the marble at the collision with the 0.1 kg weight was **Y** the speed of the marble in Investigation 2.

In Investigation 2, the energy transferred from the marble to the 0.1 kg weight was **Z** the energy transferred from the marble to the 0.1 kg weight in Investigation 1.

**Box Y**

- A.** the same as
- B.** less than
- C.** greater than

**Box Z**

- A.** the same as
- B.** less than
- C.** greater than

17. Investigation 3 changes the ramp size. The new ramp will be 90 centimeters in length and 15 centimeters in height.

The students make four claims based on the results of Investigation 3. Based on Figure 1, identify if each claim is or is not supported by the data.

Complete the table by choosing the correct answer from each box.

Claim	Claim Is or Is Not Supported by Data
The marble moves faster down the ramp.	<input type="checkbox"/> W
The marble makes less noise when it hits the weight.	<input checked="" type="checkbox"/> X
The marble has less energy when it hits the weight.	<input type="checkbox"/> Y
The marble rolls the same distance after it hits the weight.	<input type="checkbox"/> Z

#### Box W

- A. Supported by data
- B. Not supported by data

#### Box X

- A. Supported by data
- B. Not supported by data

#### Box Y

- A. Supported by data
- B. Not supported by data

#### Box Z

- A. Supported by data
- B. Not supported by data





**You have reached the end of Unit 2 of the test.**

- **Review your answers from Unit 2.**

