STUDENT NAME _____
(please print)

Grade
5

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

FORM
A

Grade 5

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.

When answering questions in this test, be sure to write your answers in your answer document. **Only the answers you write in your answer document 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** 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].

Box Y

A. all

B. some

C. none

Box 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** examples of programs that would help reduce traffic and improve air quality.

Answers to Sample Questions

1. Ⓐ ● Ⓒ Ⓓ

2. Ⓐ ● Ⓒ ● Ⓔ

3. Box Y
Ⓐ ● Ⓒ

Box Z
Ⓐ ●

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.*

STOP

Unit 1 Practice Test

Directions:

Today you will take Unit 1 of the Grade 5 New Jersey Student Learning Assessment - Science (NJSLA-S) Test.

Follow the directions to answer each question. Mark your answers by completely filling in the circles in your answer document. **Only answers you provide in your answer document will be scored.** Do not make any pencil marks outside the circles in your answer document. 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. Write your response in the space provided in your answer document. 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 and 2.

An electric current can produce motion.

A simple electric motor in two steps of development is shown in Figure 1.

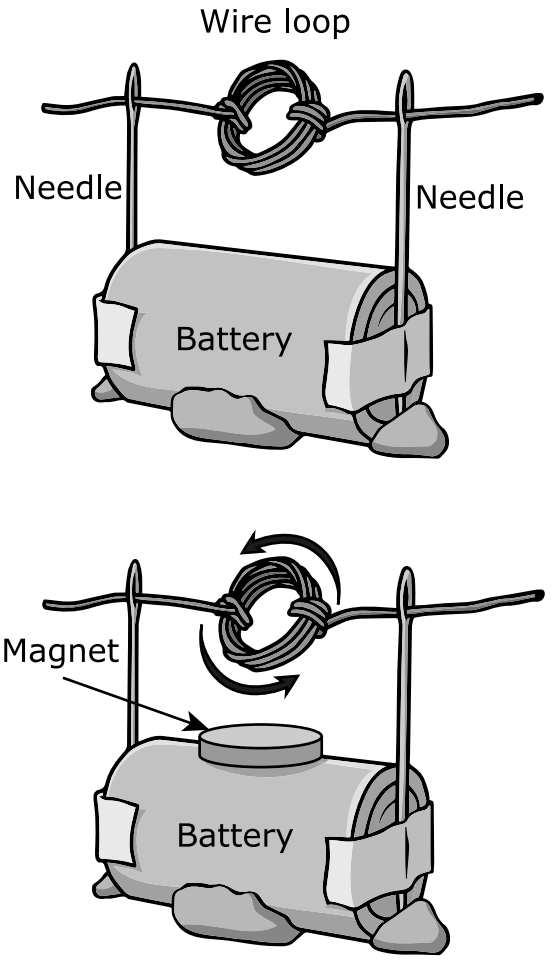


Figure 1. Electric Motor

1. In the image showing the wire spinning, energy is being converted from one form to another. In your answer folder, choose the option that correctly matches each part of the electric motor with the role it plays in the conversion of energy.

A.

	Battery	Wire Coil	Magnet
Supplies electric current	X		
Carries electric current		X	
Causes the coil to spin	X		

B.

	Battery	Wire Coil	Magnet
Supplies electric current	X		
Carries electric current			X
Causes the coil to spin	X		

C.

	Battery	Wire Coil	Magnet
Supplies electric current		X	
Carries electric current			X
Causes the coil to spin			X

D.

	Battery	Wire Coil	Magnet
Supplies electric current	X		
Carries electric current		X	
Causes the coil to spin			X

2. Which device could be operated with a similar conversion of electrical energy to motion energy?

A. a radio

B. a remote-controlled car

C. a light bulb

D. a television set

Use the information below to answer questions 3 and 4.

Figure 1 shows two identical soccer balls thrown at a wall, but one soccer ball bounces back farther away from the wall than the other.

Two students threw a soccer ball against a wall that was 15 feet away, as shown. The dot on each wall shows where the soccer ball hit it. The distance each soccer ball bounced back from the wall is shown.

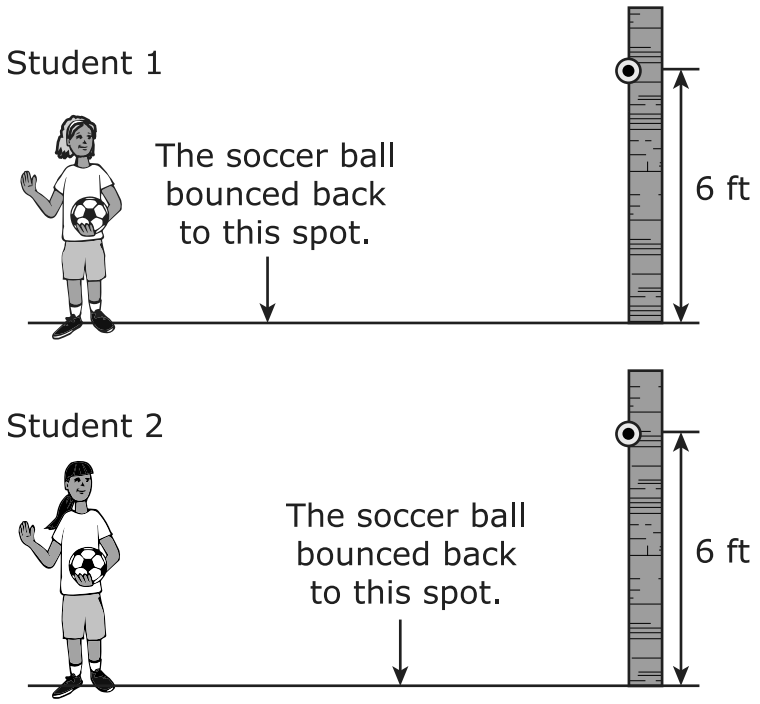


Figure 1. Students Throwing Soccer Balls

3. Which observation provides evidence that student 1 threw the ball with more energy than student 2?

A. The ball bounced back closer to student 1 than student 2.

B. The ball bounced back closer to student 2 than student 1.

C. The ball hit the wall at a higher point for student 1 than student 2.

D. The ball hit the wall at a higher point for student 2 than student 1.

4. A student claims that the soccer ball has less energy after it hits the wall. Explain if this claim is true.

Complete the sentence by choosing the correct answers from the boxes.

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

Box Y

A. all

B. some

C. none

Box Z

A. light

B. sound

Use the information below to answer questions 5 and 6.

A student on the way to school in January observes that some icy roads have been treated with sand and others with salt.

Snow and ice make roads dangerous and difficult to drive. Spreading sand or salt on roads helps make roads safer. Table 1 shows a comparison between salt and sand treatments.

Table 1. Using Salt or Sand on Roads

Characteristic	Sand	Salt
Tires skid less in the ice or snow	Yes	No
Melts ice or snow	No	Yes
Cost	Less expensive	More expensive
Temperature for use	Any	Above 10°F
Environmental issues	• Collects in drainage ditches • Mixes with groundwater	• Mixes with groundwater • Kills vegetation • Damages roads

5. A student claims that sand is better than salt to treat snow-covered winter roads. Which statement **best** supports this claim?

A. Sand has no negative environmental effects.

B. Sand melts ice and is less expensive than salt.

C. Sand provides grip for tires and melts ice on roads.

D. Sand provides grip for tires and is less expensive than salt.

6. For each road condition given, indicate whether sand or salt is the better treatment.

Snow-covered roads with an air temperature of 0°F

A. Salt

B. Sand

Icy roads with air temperature of 20°F

A. Salt

B. Sand

Icy roads with air temperature of 5°C

A. Salt

B. Sand

Use the information below to answer questions 7–9.

At night, a street light appears bigger and brighter than other street lights on the same street, just like some stars in the sky.

A student lives on a street that is long and straight. While walking home at night, the student observes three street lights at different distances. Data about each light are shown in Table 1.

Table 1. Brightness and Distances of Street Lights

Street Light	Brightness	Distance from the Student (km)
X	Medium	1
Y	Low	2
Z	Very low	3

In Table 2, data about three stars are shown.

Table 2. Brightness and Distances of Three Stars

Star	Brightness	Distance from Earth
The Sun	Very high	Far
Arcturus	Very low	Farther
Polaris	Very, very low	Farthest

7. Which statement describes how the brightness of light relates to distance?

A. The less bright the street light appears, the closer the student is to it.

B. The brighter the street light appears, the closer the student is to it.

C. The less bright the star appears, the closer it is to Earth.

D. The brighter the star appears, the farther it is from Earth.

8. Describe how the brightness of a star appears to change because of distance.

Complete the sentences by choosing the correct answers from the boxes.

Based on Tables 1 and 2, street light **Y** has the same brightness as Arcturus. If the student moves away from Arcturus, the brightness of this star would appear to **Z**.

Box Y

A. X

B. Y

C. Z

Box Z

A. increase

B. decrease

C. stay the same

9. Which claim 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.

Use the information below to answer questions 10–12.

Earthquakes can strike anywhere on Earth, but they occur more frequently in certain areas.

Figure 1 highlights areas in the United States from lowest to highest risk of experiencing an earthquake.

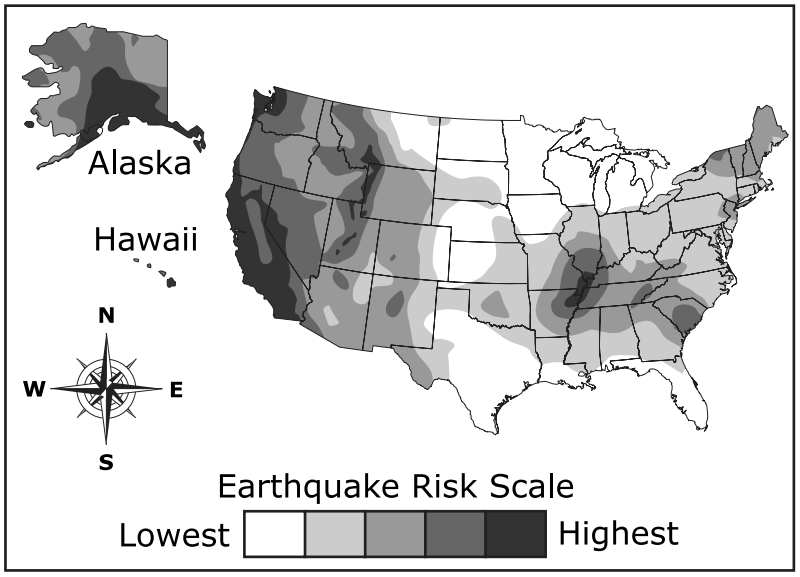


Figure 1. Earthquake Risk

10. Which is a valid statement, based on the map?

The **highest** risk of an earthquake happening is

A. on the West Coast.

B. on the East Coast.

C. in the Northeast.

D. in the South.

11. Based on the map, choose the option that shows the locations in correct order from **highest** (top) to **lowest** (bottom) risk of an earthquake happening.

A. Northern Alaska
Northern Central United States
Northern New Jersey
Southern New Jersey
Southern portion of the West Coast

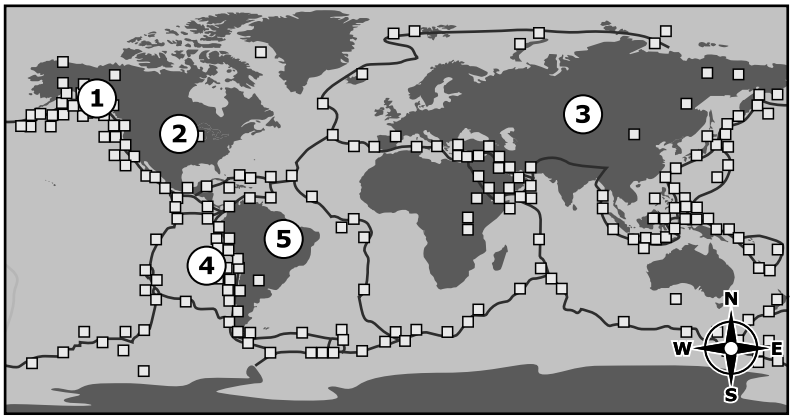
B. Southern portion of the West Coast
Northern Alaska
Northern New Jersey
Southern New Jersey
Northern Central United States

C. Northern New Jersey
Southern New Jersey
Northern Alaska
Southern portion of the West Coast
Northern Central United States

D. Northern Central United States
Southern New Jersey
Northern New Jersey
Northern Alaska
Southern portion of the West Coast

12. Locations where earthquakes occur are found around the world, but when viewed on a map, they are observed to follow a pattern.

The map shows five locations numbered 1 to 5. Identify the two locations where major earthquakes would **most likely** occur in the future.



KEY
= Earthquakes — = Continental boundaries

Figure 2. Map of Major Earthquakes since 1900

Select the **two** correct locations from the five options.

A. Location 1

B. Location 2

C. Location 3

D. Location 4

E. Location 5

GO ON TO NEXT PAGE

GO ON →

Use the information below to answer questions 13–17.

Scientists observe that some male deer in a habitat have large antlers while others have small antlers.

Figure 1 shows an adult male deer with horns, called antlers. Male deer grow and shed all of their antlers each year.

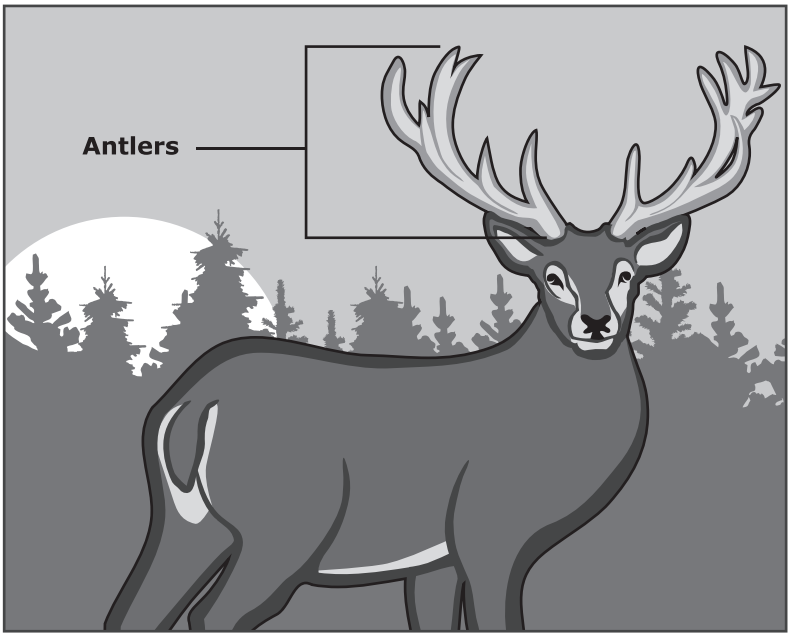


Figure 1. Male Deer with Antlers

Scientists studied populations of young male deer and their fathers in two forest sites. Table 1 gives information about each site, with data about its population of male deer from ages 2 to 4.

Table 1. Deer Data for Two Sites

Forest Site	Age of Deer (years)	Average Mass of Antlers (grams)	Average Mass of Deer (kilograms)
Forest A: Plenty of food and a wide variety of plants to eat	2	425	64
	3	700	79
	4	700	77
Forest B: Less food and limited variety of plants to eat	2	250	54
	3	600	68
	4	200	54

Table 2 shows data on selected groups of young males in Forest A with fathers that had either small or large antlers.

Table 2. Deer Groups in Forest A

Father	Age of Offspring Deer (years)	Average Mass of Offspring's Antlers (grams)
Small Antlers	2	400
	3	600
	4	650
Large Antlers	2	625
	3	1,150
	4	1,300

13. Based on Table 1, which conclusions about the two populations of deer are correct?

Select **two** of the five statements.

A. Average mass of deer increases for each increase in age of deer.

B. Average mass of antlers increases for each increase in age of deer.

C. Deer that are the oldest have the heaviest antlers in both forests.

D. At the same ages, deer that eat more are heavier than deer that eat less.

E. At the same ages, deer that eat more have heavier antlers than deer that eat less.

14. Use Table 1 to find the **difference** in the average antler masses recorded at each forest site for deer of each age listed.

Choose the answer that correctly matches the ages with the antler masses.

A.

Age (years)	Difference in Antler Mass, Forest A and Forest B (grams)
3	100
4	700

B.

Age (years)	Difference in Antler Mass, Forest A and Forest B (grams)
3	300
4	700

(Item 14 continued)

C.

Age (years)	Difference in Antler Mass, Forest A and Forest B (grams)
3	100
4	500

D.

Age (years)	Difference in Antler Mass, Forest A and Forest B (grams)
3	300
4	500

15. Based on Table 2, compare the antler mass of deer that have fathers with large or small antlers.

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

Deer with large-antlered fathers have antlers that weigh more than deer with small-antlered fathers at **Y** . At 4 years old, deer with large-antlered fathers have antlers that are **Z** the antlers of deer with small-antlered fathers.

Y

A. age 2 only

B. age 3 only

C. age 4 only

D. all ages

Z

A. lighter than

B. heavier than

C. the same mass as

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

Part A

Based on Table 1, make a claim about whether diet affects the size of a deer's antlers.

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

Part B

Based on Table 2, make a claim about whether the age of the offspring deer affects the size of its antlers.

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

17. Using Table 1, explain how the variety and amount of food affects the deer in Forest A.

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

If the variety and amount of food in Forest A decreases, the mass of the deer should **Y** and the mass of the antlers should **Z**.

Y

A. increase

B. decrease

Z

A. increase

B. decrease

STOP

You have reached the end of Unit 1 of the test.

- **Review your answers from Unit 1.**