NJSLA–S Practice Test Answer and Alignment Document
Science: Grade 5 – Unit 1

Items 1-2
Domain: Physical Science
Phenomenon: An electric current can produce motion.

Item 1
UIN: 518039_01[1]
Item Type: Technology Enhanced
Standards alignment: DCI: PS3.B; SEP: CEDS; CCC: E&M
Screen Reader (SR)/Assistive Technology (AT)/Paper Key: D
Key: A correct response will look like this:

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

Rationale:
The battery produces electrical energy.
The wire coil transmits the electric current.
The magnet causes the wire coil to spin and converts electrical energy to motion energy.

Item 2
UIN: 518039_02
Item Type: Multiple Choice
Standards alignment: DCI: PS3.B; SEP: CEDS; CCC: E&M
Key: B
Rationale:
A toy car converts electrical energy to motion energy, while the three other foils all convert electrical energy into either sound or light energy.

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[1] The UIN (Unique Identification Number) can be used to find an item in the New Jersey Digital Item Library (https://nj.digitalitemlibrary.com/)

Items 3–4

Domain: Physical Science

Phenomenon: Two of the same type of ball are thrown at a wall, but one ball bounces back farther away from the wall than the other.

Item 3

UIN: 518022_01
Item Type: Multiple Choice
Standards alignment: DCI: PS3.A; SEP: CEDS; CCC: E&M
Key: A
Rationale:

More energy will cause the ball to bounce farther away from the wall, which would cause the ball to land closer closer to Student 1, as shown in the figure.

Answer B is invalid based on the diagram.

Answers C and D are invalid based on the diagram; both students hit the ball against the wall at the same height.

Item 4

UIN: 518022_03
Item Type: Technology Enhanced
Standards alignment: DCI: PS3.A; SEP: EAE; CCC: E&M
SR/AT/Paper Key: Box Y: B; Box Z: B
Key: A correct response will look like this:

When the soccer ball hits the wall, [some ▼] of the soccer

ball's energy is transferred to the air in the form of

[sound. ▼]

Rationale:

Only some of the ball's energy is transferred to the air as sound. Light is not produced at all. If all of the energy were transferred, the ball would not have enough energy to bounce back away from the wall; and if none were transferred, a sound would not be produced.

Items 5–6

Domain: Earth and Space Science
Phenomenon: A student on the way to school in January observes that some icy roads had been treated with sand and others with salt.

Item 5

UIN: 518047_01
Item Type: Multiple Choice
Standards alignment: DCI: ESS3.B; SEP: EAE; CCC: C and E
Key: D
Rationale:

The table shows that tires skid less because sand helps the tires grip the road, and sand is also less expensive than salt. The table also states that sand does not melt ice and has some environmental impacts, making answers A, B, and C invalid.

Item 6

UIN: 518047_02
Item Type: Technology Enhanced
Standards alignment: DCI: ESS3.B; SEP: CEDS; CCC: C and E
SR/AT/Paper Key: B; A; B
Key: A correct response will look like this:

Snow-covered roads with air temperature of 0°F	Icy roads with air temperature of 20°F	Icy roads with air temperature of 5°F
Sand	Salt	Sand

Rationale:
The table shows:

Snow-covered roads: Sand helps the tires grip the road and salt does not help melt snow-covered roads when the air temperature is below 10°F.

Icy roads with air temperature of 20°F: Salt works when the temperature is above 10°F.

Icy roads with air temperature of 5°F: Sand would be better, since the temperature is below 10°F, and salt only works when the temperature is above 10°F. Sand helps the tires grip the road.

Item 7–9

Domain: Earth and Space Science

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

Item 7

UIN: 518019_05
Item Type: Multiple Choice
Standards alignment: DCI: ESS1.A; SEP: AID; CCC: S, P, and Q
Key: B
Rationale:

Table 1 shows street light X is closest to the student (1 km), and it appears the brightest (medium). Answer A is the opposite, therefore invalid.

Table 2 shows similar information as Table 1 for the relative distance and brightness of stars. The farther away the star is, the less bright it appears. Answers C and D are opposite of the information in the table, and therefore invalid.

Item 8

UIN: 518019_06
Item Type: Technology Enhanced
Standards alignment: DCI: ESS1.A; SEP: AID; CCC: S,P, and Q
SR/AT/Paper Key: Box Y: C; Box Z: B
Key: A correct response will look like this:

Based on Tables 1 and 2, street light [Z ▼] has the

same brightness as Arcturus. If the student moves away from
Arcturus, the brightness of this star would appear to

[decrease. ▼]

Rationale:

Tables 1 and 2 show street light Z's brightness is "very low," which is the same level of brightness as Arcturus. The farther away the star, the less bright it appears. The Sun is the closest star and its brightness is very high.

Item 9

UIN: 518019_07
Item Type: Multiple Choice
Standards alignment: DCI: ESS1.A; SEP: EAE; CCC: S,P, and Q
Key: B
Rationale:

Table 2 shows that the Sun appears larger because it is the closest star to Earth and it is the brightest.

Items 10–12

Domain: Earth and Space Science
Phenomenon: Earthquakes can strike anywhere on Earth, but they occur more frequently in certain areas.

Item 10

UIN: 518037_01
Item Type: Multiple Choice
Standards alignment: DCI: ESS2.B; SEP: AID; CCC: PAT
Key: A
Rationale:

The West Coast consists mainly of yellow and orange areas, which, according to the earthquake risk scale, represent the highest risk for earthquakes. The East Coast, Northeast, and South all contain mostly light or dark green areas, with some yellow in the South. According to the risk scale, these colors represent a lower risk than the orange color of the West Coast.

Item 11

UIN: 518037_03
Item Type: Technology Enhanced
Standards alignment: DCI: ESS2.B; SEP: AID; CCC: PAT
SR/AT/Paper Key: B
Key: A correct response will look like this:

Earthquake Risk in the United States

Highest ↓ Lowest	
Highest	Southern portion of the West Coast
	Northern Alaska
	Northern New Jersey
	Southern New Jersey
Lowest	Northern Central United States

Rationale:

According to the earthquake risk scale, the southern portion of the West Coast has the highest risk for earthquakes, because the colors are mostly orange and yellow. The northern coast of Alaska is next, as the colors are mostly yellow and dark green. Northern NJ is next because the color is dark green. Southern NJ is next because the color is light green. The upper Midwest is last because that area is light blue.
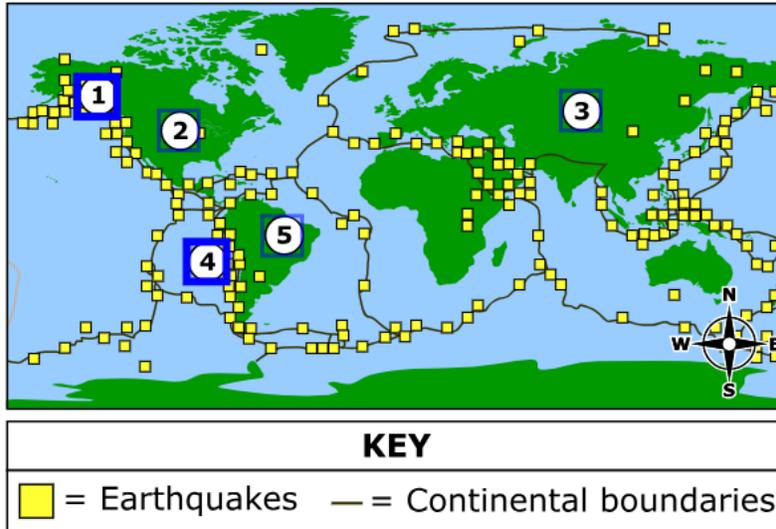
Item 12

UIN: 518037_04
Item Type: Technology Enhanced
Standards alignment: DCI: ESS2.B; SEP: AID; CCC: PAT
SR/AT/Paper Key: A and D
Key: 1 and 4. A correct response will look like this:

Figure 2. Map of Major Earthquakes since 1900

Rationale:
Locations 1 and 4 show areas where earthquakes most likely will occur. As shown on the map, both areas have experienced numerous major earthquakes since 1900. Also, locations 1 and 4 are along continental boundaries where two tectonic plates are colliding, making earthquakes occur. Locations 2, 3, and 5 are not located on or directly next to a continental plate boundary, and do not fit either of these descriptions.

Items 13–17

Domain: Life Science

Phenomenon: Once a welcome part of the ecosystem in many New Jersey woodlands, the white-tailed deer are now unwelcome residents.
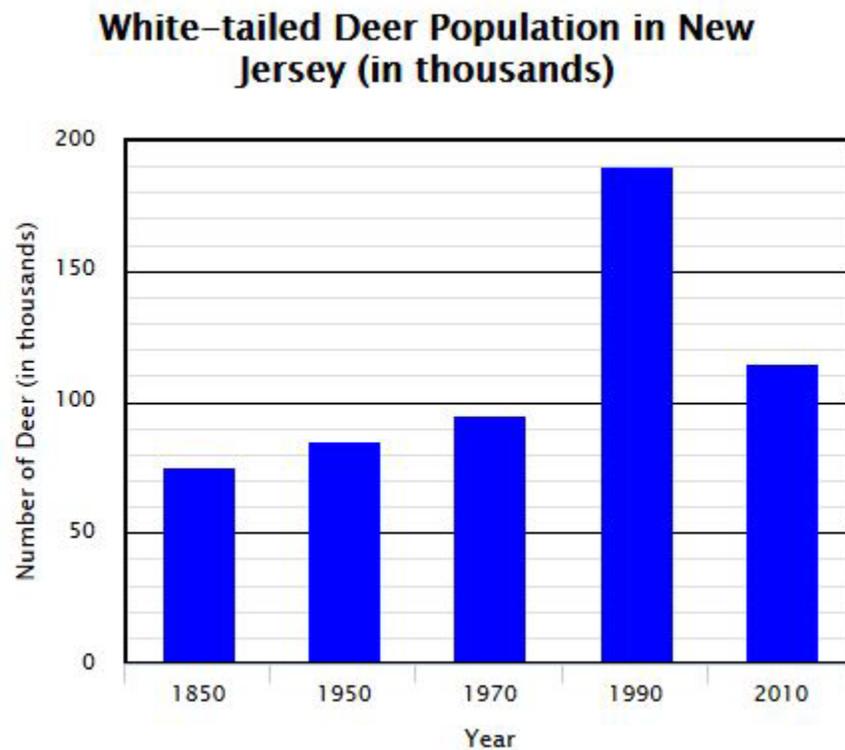
Item 13

UIN: 519011_01a

Item Type: Technology Enhanced

Standards alignment: DCI: LS2.C; SEP: AID; CCC: S & SM

SR/AT/Paper Key: Part A: C; Part B: Box Y: B; Box Z: A

Key: Bar Graph: The values of the editable bars going from left to right should be 75, 85, 95, 190, 115. A correct response will look like this:

Part A

Part B

The deer population [increased   ▾] until 1990

and then the population started [decreasing.   ▾]

Rationale:

The table shows the following data: the population increased from 75,000 in 1850, to 85,000 in 1950, to 95,000 in 1970. In 1990, the population reached the highest number at 190,000, but it then decreased to 115,000 in 2010.

Item 14

UIN: 519011_02a
Item Type: Multiple Choice
Standards alignment: DCI: LS2.C; SEP: AQDP; CCC: C and E
Key: C and D
Rationale:

Only C (How much deer habitat has been lost to development) and D (Has the number of the deer's natural predators changed) would affect the change in the deer population. The other three foils are questions that would not have an effect on the deer population.

Item 15

UIN: 519011_03a
Item Type: Technology Enhanced
Standards alignment: DCI: LS4.D; SEP: AID; CCC: PAT
Key: 2000
Rationale:

The table shows the population of deer decreased from 190,000 in 1990 to 155,000 in 2000, so the decrease in population indicates the program showed results due to the decrease in the population.

Item 16

UIN: 519011_04a
Item Type: Technology Enhanced
Standards alignment: DCI: LS4.D; SEP: AID; CCC: C and E
SR/AT/Paper Key: Box X: A; Box Y: A; Box Z: A
Key: A correct response will look like this:

Deer density [increases ▾] as land development increases.

This is a result of [more ▾] deer in the specific area,

which causes a(n) [increase ▾] in problems for people and their

environment.

Rationale:

The table shows as land development increases (high), the number of deer per acre also increases. Because there are more deer found on the same amount of land, this will most likely cause more problems for the human population.

Item 17

    UIN: 519011_05a

    Item Type: Constructed Response

    Standards alignment: DCI: LS4.D; SEP: EAE; CCC: S & SM

    Sample student response: The best solution would be to increase hunting. This will permanently remove some of the deer from these areas. Another effective solution would be to use deer spray. This will keep deer out of gardens and therefore they will not be eating plants and crops. The deer spray will not injure the deer. The least effective solution would be to move deer out of the area. If deer are moved to another area, they can move back to where they originally came from and cause the same problems they did before. Or they could become somebody else's problem. Finally, another solution that would be less effective is using fences to block the deer. Using fences would only work if large areas of land were fenced. Building these fences would cost a lot of money.

    Key:

This item has 4 quality points:

- 1 point for choosing one effective solution for reducing deer population and explaining why.
- 1 point for choosing a second effective solution for reducing deer population and explaining why.
- 1 point for choosing a less effective solution for reducing deer population and explaining why.
- 1 point for choosing a second less effective solution for reducing deer population and explaining why.

    Rationale:

Students can justify any of the four solutions as being more or less effective than the others based on their own opinion, as long as they can support their choice.