2004 CSAP Released Items

Grade 8 Science
Complete the table below to show how different rocks are formed.

<table>
<thead>
<tr>
<th>Example of Rock</th>
<th>Type of Rock</th>
<th>Description of how rock formed</th>
</tr>
</thead>
<tbody>
<tr>
<td>sandstone</td>
<td>sedimentary</td>
<td></td>
</tr>
<tr>
<td>gneiss</td>
<td>heat and pressure changed an existing rock</td>
<td></td>
</tr>
<tr>
<td>granite</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CSAP Grade 8 Science Scoring Guide

**Item 1:**

**Rubric**

**Key Elements:**

<table>
<thead>
<tr>
<th>Example of Rock</th>
<th>Type of Rock</th>
<th>Description of how rock formed</th>
</tr>
</thead>
<tbody>
<tr>
<td>sandstone</td>
<td>sedimentary</td>
<td>sand/sediments/deposits were compacted/cemented together</td>
</tr>
<tr>
<td>gneiss</td>
<td>metamorphic</td>
<td>heat and pressure changed an existing rock</td>
</tr>
<tr>
<td>granite</td>
<td>igneous</td>
<td>magma/melted rock cooled and hardened/solidified/crystallized</td>
</tr>
</tbody>
</table>

**Score Points**

- 2 points: 3 or 4 cells correctly filled
- 1 point: 2 cells correctly filled
- 0 points: other

Standard 4: Earth and Space Science
Benchmark 4.1.1: Explaining how minerals, rocks, and soils form.
Subcontent Area: earth science
Complete the table below to show how different rocks are formed.

<table>
<thead>
<tr>
<th>Example of Rock</th>
<th>Type of Rock</th>
<th>Description of how rock formed</th>
</tr>
</thead>
<tbody>
<tr>
<td>sandstone</td>
<td>sedimentary</td>
<td>sediments are moved together and cemented together</td>
</tr>
<tr>
<td>gneiss</td>
<td>metamorphic</td>
<td>heat and pressure changed an existing rock</td>
</tr>
<tr>
<td>granite</td>
<td>igneous</td>
<td>volcanic lava is melted and hardened into rocks</td>
</tr>
</tbody>
</table>
Complete the table below to show how different rocks are formed.

<table>
<thead>
<tr>
<th>Example of Rock</th>
<th>Type of Rock</th>
<th>Description of how rock formed</th>
</tr>
</thead>
<tbody>
<tr>
<td>sandstone</td>
<td>sedimentary</td>
<td>heat and pressure on sand or dirt to form a rock</td>
</tr>
<tr>
<td>gneiss</td>
<td>metamorphic</td>
<td>heat and pressure changed an existing rock</td>
</tr>
<tr>
<td>granite</td>
<td>igneous</td>
<td>volcanic stuff pressed into rocks</td>
</tr>
</tbody>
</table>

1 Point Anchor 8S-2202
Complete the table below to show how different rocks are formed.

<table>
<thead>
<tr>
<th>Example of Rock</th>
<th>Type of Rock</th>
<th>Description of how rock formed</th>
</tr>
</thead>
<tbody>
<tr>
<td>sandstone</td>
<td>sedimentary</td>
<td>sediments are cemented and compacted together.</td>
</tr>
<tr>
<td>gneiss</td>
<td>igneous</td>
<td>heat and pressure changed an existing rock</td>
</tr>
<tr>
<td>granite</td>
<td>metamorphic</td>
<td>weathering and erosion</td>
</tr>
</tbody>
</table>

0 Point Anchor

8S-2203
2004 CSAP Released Items

Grade 8 Science
2 An animal cell is shown below.

Which cell part is indicated by the arrow?

What is one function of this cell part?
CSAP Grade 8 Science Scoring Guide

Item 2:

Rubric

Key Elements:

---
cell membrane

one of the following:

• controls what enters and leaves the cell
• protects the cell
• acts as a boundary/keeps the parts together

---

Score Points

2 points  two key elements
1 point   one key element
0 points  other

Standard 3: Life Science
Benchmark 3.3.1: Describing the observable components and functions of a cell.
Subcontent Area: not assigned
An animal cell is shown below.

Which cell part is indicated by the arrow?

Cell membrane

What is one function of this cell part?

To control what goes in and out of the cell
An animal cell is shown below.

Which cell part is indicated by the arrow?

- cell wall

What is one function of this cell part?

- The cell wall protects the inside of the cell.

1 Point Anchor

8S-2502
An animal cell is shown below.

Which cell part is indicated by the arrow?

the outer layer

What is one function of this cell part?

nucleus

0 Point Anchor

8S-2503
2004 CSAP Released Items

Grade 8 Science
Directions

Three high school students wanted to investigate how far they could drive if the gas tanks of their cars were full of gasoline. To do this, the students went to the same gas station to fill the tanks of their cars. They then drove their cars until the gas tanks were nearly empty.

The table below shows all the information the students collected during their investigation. Study the table. Then do Numbers 3 and 4.

Miles Driven by Different Cars

<table>
<thead>
<tr>
<th>Student</th>
<th>Type of Car</th>
<th>Speed Driven (miles per hour)</th>
<th>Gallons of Gasoline Tank Can Hold</th>
<th>Type of Road</th>
<th>Miles Driven</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Trans W</td>
<td>20</td>
<td>12</td>
<td>city streets</td>
<td>380</td>
</tr>
<tr>
<td>2</td>
<td>Mark 2002</td>
<td>40</td>
<td>15</td>
<td>country roads</td>
<td>310</td>
</tr>
<tr>
<td>3</td>
<td>Apex GXE</td>
<td>60</td>
<td>14</td>
<td>highway</td>
<td>420</td>
</tr>
</tbody>
</table>

Based on their investigation, the students concluded that they could drive farther on a full tank of gasoline in an Apex GXE than they could in the other cars. Give one reason their conclusion may be incorrect.

__________________________________________________________

__________________________________________________________

__________________________________________________________
CSAP Grade 8 Science Scoring Guide

Item 3:

Rubric

Key Elements:

one of the following:

- Experimental conditions for the cars were not the same.
- any answer that indicates the conclusion may be incorrect due to uncontrolled variables (e.g., amount of gasoline, speed, type of road, etc.)

Score Points

1 point one key element
0 points other

Standard 1: Scientific Investigations
Benchmark 1.6: Interpreting and evaluating data in order to formulate conclusions.
Subcontent Area: experimental design and investigation
Directions
Three high school students wanted to investigate how far they could drive if their cars' tanks were full of gasoline. To do this, the students went to the same gas station to fill their cars' gas tanks. They then drove their cars until their gas tanks were nearly empty.

The table below shows all the information the students collected during their investigation. Study the table. Then do Numbers 65 and 66.

<table>
<thead>
<tr>
<th></th>
<th>Type</th>
<th>Miles</th>
<th>City Miles</th>
<th>City Condition</th>
<th>Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Trans W</td>
<td>20</td>
<td>12</td>
<td>city streets</td>
<td>380</td>
</tr>
<tr>
<td>2</td>
<td>Nimbus 2000</td>
<td>40</td>
<td>15</td>
<td>country roads</td>
<td>310</td>
</tr>
<tr>
<td>3</td>
<td>Apex GXR</td>
<td>60</td>
<td>14</td>
<td>highway</td>
<td>420</td>
</tr>
</tbody>
</table>

Based on their investigation, the students concluded that they could drive farther on a full tank of gasoline in an Apex GXR than they could in the other cars. Give one reason their conclusion may be incorrect.

They didn't test each car under the same conditions.

<table>
<thead>
<tr>
<th>point</th>
<th>Anchor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8S-1650</td>
</tr>
</tbody>
</table>
Directions

Three high school students wanted to investigate how far they could drive if their cars' tanks were full of gasoline. To do this, the students went to the same gas station to fill their cars' gas tanks. They then drove their cars until their gas tanks were nearly empty.

The table below shows all the information the students collected during their investigation. Study the table. Then do Numbers 65 and 66.

### MILES DRIVEN BY DIFFERENT CARS

<table>
<thead>
<tr>
<th>Student</th>
<th>Type of Car</th>
<th>Speed Driven (miles/hour)</th>
<th>Gallons of Gasoline Used</th>
<th>Type of Road</th>
<th>Miles Driven</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Trans W</td>
<td>20</td>
<td>12</td>
<td>city streets</td>
<td>380</td>
</tr>
<tr>
<td>2</td>
<td>Nimbus 2000</td>
<td>40</td>
<td>15</td>
<td>country roads</td>
<td>310</td>
</tr>
<tr>
<td>3</td>
<td>Apex GXE</td>
<td>60</td>
<td>14</td>
<td>highway</td>
<td>420</td>
</tr>
</tbody>
</table>

Based on their investigation, the students concluded that they could drive farther on a full tank of gasoline in an Apex GXE than they could in the other cars. Give one reason their conclusion may be incorrect.

One reason this is correct is because that car went the farthest on its tank of gas.
2004 CSAP Released Items

Grade 8 Science
Describe **three** specific changes the students could make to improve their experiment.

1) __________________________________________

2) __________________________________________

3) __________________________________________
CSAP Grade 8 Science Scoring Guide

Item 4:

Rubric

Key Elements:

Drive the cars at the same speed.

Drive the cars on the same road.

Put the same amount of gasoline in each car.

Monitor the amount of gasoline more closely (students may define when the tank is considered empty).

Conduct more trials of the experiment to obtain more reliable data.

Have the same person drive each car.

Score Points

3 points three key elements
2 points two key elements
1 point one key element
0 points other

Standard 1: Scientific Investigations
Benchmark 1.1: Identifying and evaluating alternative explanations and procedures.
Subcontent Area: experimental design and investigation
Directions

Three high school students wanted to investigate how far they could drive if their cars' tanks were full of gasoline. To do this, the students went to the same gas station to fill their cars' gas tanks. They then drove their cars until their gas tanks were nearly empty.

The table below shows all the information the students collected during their investigation. Study the table. Then do Numbers 65 and 66.

**MILES DRIVEN BY DIFFERENT CARS**

<table>
<thead>
<tr>
<th>Student</th>
<th>Type of Car</th>
<th>Speed Driven (miles per hour)</th>
<th>Gallons of Gasoline Used</th>
<th>Type of Road</th>
<th>Miles Driven</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Trans W</td>
<td>20</td>
<td>12</td>
<td>city streets</td>
<td>380</td>
</tr>
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<td>Nimbus 2000</td>
<td>40</td>
<td>15</td>
<td>country roads</td>
<td>310</td>
</tr>
<tr>
<td>3</td>
<td>Apex GXB</td>
<td>60</td>
<td>14</td>
<td>highway</td>
<td>420</td>
</tr>
</tbody>
</table>

Describe three specific changes the students could make to improve their experiment.

1) **Use the same route for all three cars, so that their data will be more accurate.**

2) **Do a lot more trials than just one, so that the data will be more accurate.**

3) **Use the same speed for every car, because cars use up more gas when they go faster.**

8S-1850

**3 Point Anchor**
Directions

Three high school students wanted to investigate how far they could drive if their cars' tanks were full of gasoline. To do this, the students went to the same gas station to fill their cars' gas tanks. They then drove their cars until their gas tanks were nearly empty.

The table below shows all the information the students collected during their investigation. Study the table. Then do Numbers 65 and 66.

MILES DRIVEN BY DIFFERENT CARS

<table>
<thead>
<tr>
<th>Number</th>
<th>Type of Car</th>
<th>Speed Driven (miles per hour)</th>
<th>Gallons of Gasoline Tank Cards Hold</th>
<th>Type of Road</th>
<th>Miles Driven</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Trans W</td>
<td>20</td>
<td>12</td>
<td>city streets</td>
<td>380</td>
</tr>
<tr>
<td>2</td>
<td>Nimbus 2000</td>
<td>40</td>
<td>15</td>
<td>country roads</td>
<td>310</td>
</tr>
<tr>
<td>3</td>
<td>Apex GXB</td>
<td>60</td>
<td>14</td>
<td>highway</td>
<td>420</td>
</tr>
</tbody>
</table>

Describe three specific changes the students could make to improve their experiment.

1) All drive on the same type of road.

2) All drive at the same speed.

3) All get the same kind of car, only with different sized tanks.

2 Point Anchor 8S-1851
Directions

Three high school students wanted to investigate how far they could drive if their cars' tanks were full of gasoline. To do this, the students went to the same gas station to fill their cars' gas tanks. They then drove their cars until their gas tanks were nearly empty.

The table below shows all the information the students collected during their investigation. Study the table. Then do Numbers 65 and 66.

### MILES DRIVEN BY DIFFERENT CARS

<table>
<thead>
<tr>
<th>Student</th>
<th>Apex Car</th>
<th>Speed Driven</th>
<th>Gallons of Gasoline Tank Full Held</th>
<th>Type of Road</th>
<th>Miles Driven</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Trans W</td>
<td>20</td>
<td>12</td>
<td>city streets</td>
<td>380</td>
</tr>
<tr>
<td>2</td>
<td>Nimbus 2000</td>
<td>40</td>
<td>15</td>
<td>country roads</td>
<td>310</td>
</tr>
<tr>
<td>3</td>
<td>Apex GXE</td>
<td>60</td>
<td>14</td>
<td>highway</td>
<td>420</td>
</tr>
</tbody>
</table>

Describe three specific changes the students could make to improve their experiment.

1) First they could go the same speed.

2) Make a line graph

3) Put some other cars mileage.
Directions

Three high school students wanted to investigate how far they could drive if their cars' tanks were full of gasoline. To do this, the students went to the same gas station to fill their cars' gas tanks. They then drove their cars until their gas tanks were nearly empty.

The table below shows all the information the students collected during their investigation. Study the table. Then do Numbers 65 and 66.

MILES DRIVEN BY DIFFERENT CARS

<table>
<thead>
<tr>
<th>Student</th>
<th>Type of Car</th>
<th>Speed Driven (miles per hour)</th>
<th>Gallons of Gasoline Tank Capacity</th>
<th>Type of Road</th>
<th>Miles Driven</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Trans W</td>
<td>20</td>
<td>12</td>
<td>city streets</td>
<td>380</td>
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<tr>
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<td>310</td>
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<tr>
<td>3</td>
<td>Apex BXE</td>
<td>60</td>
<td>14</td>
<td>highway</td>
<td>420</td>
</tr>
</tbody>
</table>

Describe three specific changes the students could make to improve their experiment.

1) They could stop using so much gas.

2) No drive so much

3) Not use so much gas up

0 Point Anchor 8S-1853