**Math on the Science and Social Studies Sub-Tests**

In addition to the math sub-test, there is math on both the Science and Social Studies sub-tests of the TASC. In this packet you will find sample TASC-style questions in Social Studies and Science.

We can’t share actual questions from the TASC Readiness Assessments. The items in this packet come from two sources:
- The TASC Item Specifications in Science and Social Studies
- The New York State Regents Exams in Science and American History

The following Question Stems are found throughout the TASC Readiness Assessments in Social Studies and Science on questions involving graphs and charts:

- Which factor contributed the most to the changes shown on the charts?
- Which statement describes an effect of the changes shown in the charts?
- Which of these contributed the most to the trend shown on the graph?
- Which conclusion can be drawn from the data on the graph?
- Which comparison can be supported by the information in the graph?

---

1 As opposed to math, the TASC Science and Social Studies Item Specifications are missing sample items for many of the standards. When no sample items were provided, we have substituted appropriate New York State Regents questions. The NYS Regents exams are aligned to the same standards as the TASC. We choose NYS Regents questions that aligned with the standards and question-types found on the TASC. We used the question stems above, questions stems similar to the Readiness Assessment, and the standards described in the TASC Item Specification documents.

©2018 The City University of New York Adult Literacy/HSE/ESL Program (http://literacy.cuny.edu). This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0).
What was the primary cause of the trends shown on the graph?

A. closing of the Western frontier  
B. industrialization of the North and the Midwest  
C. passage of the Homestead Act  
D. completion of the transcontinental railroad
Which section of the country gained the most population in the years shown on the graph?

A. South  
B. Midwest  
C. Northeast  
D. West

What is one effect the population changes shown in the graph have had on national politics?

A. Reducing the number of senators from the Midwest  
B. Increasing the representation of the South and the West in Congress  
C. Enhancing the chances for election of presidential candidates from the Northeast  
D. Strengthening the Democratic Party’s control of the South
Which conclusion is best supported by the information on the chart?

A. Business advertising had succeeded in selling more products.
B. Violence by labor had increased throughout the country.
C. Economic conditions had become worse.
D. The stock market had recovered in 1933.
Which conclusion about the United States economy during World War II is most clearly supported by the information in the graph?

A. Organized labor conducted frequent strikes during the war years.
B. The war led to improved economic conditions.
C. The Gross National Product (GNP) steadily declined during the war years.
D. Unemployment increased throughout the war.
Which statement about population distribution is best supported by the information provided in the graph?

A. Since 1900, the percentage of the population located in the South has steadily declined.
B. Since 1900, the greatest percentage increase in population has occurred in the West.
C. Before 1950, the greatest percentage change in population distribution occurred in the Midwest.
D. Since 1950, the population of the Northeast as a percentage of the nation has remained constant.
The trend shown on the graph would most likely result in

A. A decreased demand for deforestation
B. An increase in available freshwater
C. A decrease in air pollution
D. An increased demand for land use
The graph indicates that the number of species that have become extinct

A. Has increased with increasing human population
B. Has decreased with increasing human population
C. Is not affected by the size of human population
D. Is greater than the size of the human population
Below shows the carrying capacities of an ecosystem for three different species 1, 2, and 3, that inhabit an area and the actual population sizes of these three different species in the area.

Which of these statements below is the most likely true, based on the graph above?

A. The competition between members of Species 1 is the highest.
B. The competition between members of Species 2 is highest.
C. The competition between members of Species 3 is highest.
D. The competition would be the same for each species.
According to the cross section, every 1 million years, the ocean floor bedrock moves approximately

A. 20 km toward the Mid-Atlantic Ridge
B. 20 km away from the Mid-Atlantic Ridge
C. 40 km toward the Mid-Atlantic Ridge
D. 40 km away from the Mid-Atlantic Ridge
In a particular ecosystem, squirrels make up a large portion of the diet of coyotes. A fatal disease in the squirrel population begins to reduce their population over a period of months. Which graph best represents the expected changes in population size of the coyotes and the squirrels?
Which graph correctly shows the effect of heat energy on the motion of molecules of matter?
A Punnett square is shown below. The dominant trait is represented by R. The recessive trait is represented by r.

What percentage of the offspring will most likely show the dominant trait?
A. 25%
B. 50%
C. 75%
D. 100%

According to the information in the Punnett square, what is the likelihood that the child would have attached earlobes?
A. 0%
B. 25%
C. 50%
The diagram below represents a student using a spring scale to pull a toy cart across a level table.

The student pulled the cart across the table five times. Each time, the student used more force.

Newton’s second law can be represented by the following equation.

\[ F = m \times a \]

In the equation, \( F \) is the net force in newtons, \( m \) is the mass of the object in kilograms, and \( a \) is the acceleration of the object in meters per second squared.

Force is measured on the spring scale. The student then calculated the acceleration of the cart, measured in meters per second (m/s\(^2\)). The results are shown in the data table below.

<table>
<thead>
<tr>
<th>Force (N)</th>
<th>Cart Acceleration (m/s(^2))</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0</td>
<td>1.5</td>
</tr>
<tr>
<td>3.6</td>
<td>1.8</td>
</tr>
<tr>
<td>4.2</td>
<td>2.1</td>
</tr>
<tr>
<td>4.8</td>
<td>2.4</td>
</tr>
<tr>
<td>5.4</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Determine the mass of the cart.

A. 1 kg  
B. 2 kg  
C. 3 kg  
D. 4 kg  

What force would cause the cart to accelerate at 6 m/s\(^2\)?

A. 2 N  
B. 4 N  
C. 8 N  
D. 12 N
Math instruction should include graphs and charts in a science or historical context. When possible, math teachers should confer with reading/writing teachers to look for opportunities to integrate math into other disciplines, especially through the use of data, charts, and graphs. See the CUNY Data and Graph Collection for engaging data sets and ideas on how to use them in the classroom.

http://www.collectedny.org/frameworkposts/cuny-graph-collection/

©2018 The City University of New York Adult Literacy/HSE/ESL Program (http://literacy.cuny.edu). This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0).