



**October 12, 2014**  
**Advisor Lesson Plan**

**Lesson Components:**

- Go over standardized test strategies
- Administer ACT Aspire practice test

**Note to Advisers:**

The district has not provided a sample test for the ACT Aspire. I created this sample test and answer key from online sources which will hopefully resemble the actual test in terms of sections and general format.

<b>Time</b>	30 minutes
<b>Materials</b>	1) Sample tests

**Learning Process Overview**

<b>Step</b>	<b>Time</b>	<b>Most important contents</b>
welcome	2 min.	1) Attendance and general welcome
testing day info	3 min.	1) Briefly go over the testing day information below
practice test	25 min.	2) Administer practice test questions and go over answers at end of advisory session

Briefly talk to your advisory group about the testing day. Items for possible mention include:

1. You will be taking the ACT Aspire test on Wednesday, October 14. This is a test that prepares students for standardized tests for college entrance. Next year you will do the PSAT test which will further introduce you to standardized testing. After these practice tests you should be ready to take the ACT or the SAT, the actual tests required for college entrance.
2. The ACT Aspire test is "standardized". This means that it is administered in the same formal way to all students. The person



administering the test will read from a script and all students taking this test should experience essentially the same testing conditions. If you

have questions you should ask them but the test supervisor will not be able to give you any help in answering the actual test questions. He or she is just following the standard procedure for giving the test.

3. On the day of the test make sure to bring at least two number 2 pencils. You may bring a standard (four function, scientific, or basic graphing) calculator to the test to be used only for the mathematics section. Two students may not share a calculator. Calculators that make noise are not allowed. Some very sophisticated calculators are prohibited.
4. During the test you may not use highlight pens, scratch paper, notes, or foreign language dictionaries. Scratch work is to be done on your test booklet.
5. There is no penalty for guessing on this test. However, if you are unsure of the correct answer and want to guess, it is best to narrow the down the list of possible correct answers first by eliminating answers that could not possibly be correct.
6. Cell phones should be turned off before you enter the testing room. The phone should be left turned off for the entire test. Anyone using a cell phone, or found with a cell phone turned on, can have the cell phone confiscated and their test destroyed. Cell phones and PDAs may not be used as calculators. No electronic devices, including digital watches and calculators, should be taken into the test center if they make any noises or beeps.
7. During the breaks do not attempt to use a cell phone. Also do not talk to anyone about the test.
8. You may bring a snack food item to the testing room as well as water in a closed container. The snack food and water should only be consumed during break times.
9. During any break and after the test it is important to remain very quiet as other students will be testing in other rooms and not all tests end at the same time.
10. The test has a number of sections and at any time you should only be working on the section that the test supervisor tells you to work on.
11. You will be meeting in your regular advisory classroom unless your advisor gives you a different classroom assignment today. Ask ahead of time if you are not clear about where to go.
12. Report to your testing room no later than 9:30 a.m. on the morning of the test.

## English Exemplar Answer Key

Sequence	Grade Band	Item Type	Correct Response
1	Early HS	Selected Response	D
2	Early HS	Selected Response	D
3	Early HS	Selected Response	C
4	Early HS	Selected Response	C
5	Early HS	Selected Response	B
6	Early HS	Selected Response	C

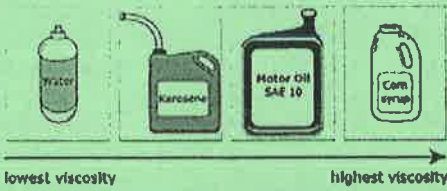
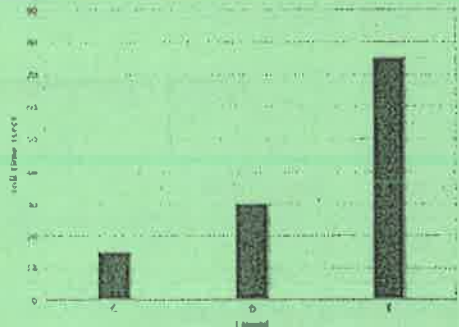
## Math Exemplar Answer Key

Sequence	Grade	Item Type	Correct Response
1	Early HS	Selected Response	E
2	Early HS	Constructed Response	Not provided
3	Early HS	Selected Response	C
4	Early HS	Selected Response	E
5	Early HS	Selected Response	C
6	Early HS	Constructed Response	Not provided

## Reading Exemplar Answer Key

Sequence	Grade	Item Type	Correct Response
1	Early HS	Selected Response	B
2	Early HS	Selected Response	A
3	Early HS	Selected Response	A
4	Early HS	Selected Response	D
5	Early HS	Selected Response	B
6	Early HS	Selected Response	C
7	Early HS	Constructed Response	Not provided

## Science Exemplar Answer Key

Sequence	Grade	Item Type	Correct Response								
1	Early HS	Selected Response	D								
2	Early HS	Selected Response	D								
3	Early HS	Technology Enhanced	 <p style="text-align: center;">lowest viscosity <span style="float: right;">highest viscosity</span></p>								
4	Early HS	Technology Enhanced	 <table border="1" style="margin-left: auto; margin-right: auto;"> <caption>Flow Time Data</caption> <thead> <tr> <th>Liquid</th> <th>Flow Time (sec)</th> </tr> </thead> <tbody> <tr> <td>Z</td> <td>15</td> </tr> <tr> <td>D</td> <td>20</td> </tr> <tr> <td>E</td> <td>75</td> </tr> </tbody> </table>	Liquid	Flow Time (sec)	Z	15	D	20	E	75
Liquid	Flow Time (sec)										
Z	15										
D	20										
E	75										

**ACT<sup>®</sup> Aspire<sup>™</sup>**



## Sample Test

\* For online practice - please visit:

[tn.actaspire.org](http://tn.actaspire.org)

and enter the following log in info:

User ID: Reading  
password: actaspire

User ID: Math  
password: actaspire

# ACT Aspire Early High School English

## Cycling About

[1]

In 1817, Baron von Drais of Germany, tired of walking, tried to come up with an easier way to explore his expansive gardens. He attached two equal-sized wooden wheels to a wooden plank and connected the front wheel to a bar for steering. [A] The baron propelled the device by straddling the plank and running his feet along the ground. While this<sup>1</sup> *Laufmaschine* (running machine), as von Drais called it, was uncomfortable to ride and nearly impossible to steer. Even so, it inspired the public to imagine a new two-wheeled means of transportation—and encouraged inventors to create just that.

[2]

By the 1860s, French craftsman<sup>2</sup> *Pierre Michaux* had designed a bicycle-like machine that featured a lightweight iron frame and pedals. But it was not perfect. Called the *vélocipède*, or fast foot, it became popularly called<sup>3</sup> as the “boneshaker.” Its stiff, hardwood wheels made for a jarring ride on bumpy cobblestone roads. Only the strongest men could navigate the boneshaker—and even they had to ride slowly. [B]

[3]

Hoping to provide the public a faster, smoother ride, English manufacturers in the 1870s introduced the “high-wheel” bicycle. It included a huge front wheel paired with a tiny back wheel, both with cushiony rubber tires. [C] The problem, though, was that riders had to sit perched high up on these bicycles, creating a hazard regarding their position when they rode.<sup>4</sup> Most people—with the exception of daring young men—didn’t ride the high-wheel.

[4]

Not until the 1890s, after attempts to make high-wheel bicycles safer had failed, were “safety” bicycles introduced in Europe and the United States. These models varied significantly in price.<sup>5</sup> American suffragist Susan B. Anthony called the safety the “freedom machine.” [D] Finally, almost everyone could move about with ease on a bicycle—and they did.

1. A. NO CHANGE  
B. Regardless of whether this  
C. Considering that this  
D. This
2. A. NO CHANGE  
B. craftsman, Pierre Michaux,  
C. craftsman, Pierre Michaux  
D. craftsman Pierre Michaux
3. A. NO CHANGE  
B. referred  
C. known  
D. said
4. Which choice provides the most precise information about a potential effect of riders having to sit high up on the high-wheel bicycle?  
A. NO CHANGE  
B. frightening situation in terms of their orientation.  
C. dangerous tipping hazard.  
D. fearful issue.
5. Given that all the choices are accurate, which one provides the most relevant information at this point in the essay?  
A. NO CHANGE  
B. had two equal-sized wheels, inflatable rubber tires, reliable brakes, and frames that allowed men, women, and children to ride comfortably.  
C. led to the formation of groups and clubs such as the League of American Wheelmen (today called the League of American Bicyclists).  
D. were made and sold even though many roads were still unpaved and difficult to ride on.
6. The writer is considering adding the following sentence to the essay:  

The incredibly large front wheel allowed riders to travel farther and faster with only one rotation of the pedals.

If the writer were to add this sentence, it would most logically be placed at which of the following points?  
A. Point A in paragraph 1  
B. Point B in paragraph 2  
C. Point C in paragraph 3  
D. Point D in paragraph 4

## ACT Aspire Early High School Mathematics

1. A pattern exists among the units digits of the powers of 7, as shown below. What is the units digit of  $7^{50}$ ?

$7^0 = 1$	$7^3 = 343$	$7^6 = 117,649$
$7^1 = 7$	$7^4 = 2,401$	$7^7 = 823,543$
$7^2 = 49$	$7^5 = 16,807$	$7^8 = 5,764,801$

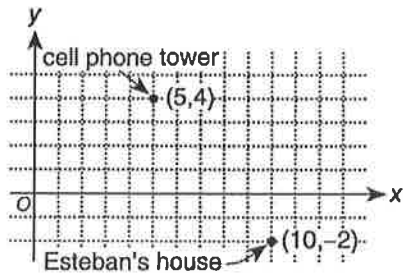
(Note: The units digit of 2,401 is 1.)

- A. 1
  - B. 3
  - C. 4
  - D. 7
  - E. 9
2. Explain why there are no solutions to the system of inequalities given below.

$$\begin{cases} y < -\frac{1}{2}x - 3 \\ y > -\frac{1}{2}x + 2 \end{cases}$$



A map of Nelson County is laid out in the standard  $(x,y)$  coordinate plane below, where the center of the county is at  $(0,0)$ . A cell phone tower is at  $(5,4)$ , and Esteban's house is at  $(10,-2)$ . Each coordinate unit represents 1 mile. The tower's signal range is 10 miles in all directions.



3. How much land area, to the nearest 10 square miles, does the tower's signal range cover?
- A. 80
  - B. 100
  - C. 310
  - D. 400
  - E. 1,260
4. The strength of the tower's signal to Esteban's house depends on the straight-line distance between his house and the tower. What is the straight-line distance, in miles, between Esteban's house and the tower?
- A.  $\sqrt{11}$
  - B.  $\sqrt{17}$
  - C.  $\sqrt{29}$
  - D.  $\sqrt{41}$
  - E.  $\sqrt{61}$

5. The tower's signal range directly above a point  $(a,b)$  on the ground extends to an altitude, in miles, given by the function  $f(a,b) = \sqrt{59 - a^2 + 10a - b^2 + 8b}$ . A jet directly above Esteban's house is within the tower's signal range. What is the maximum altitude, in miles, of the jet?

A.  $\sqrt{15}$

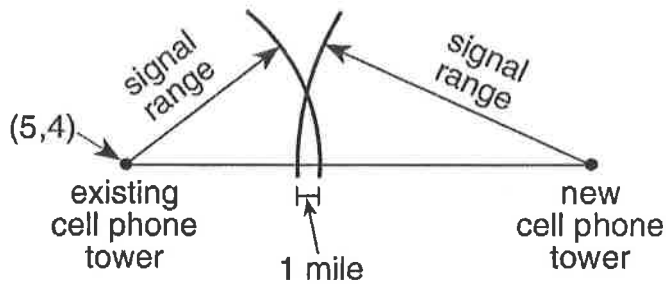
B.  $\sqrt{19}$

C.  $\sqrt{39}$

D.  $\sqrt{47}$

E.  $\sqrt{71}$

6. Star Wireless will add a new cell phone tower, represented by a point on the same horizontal line and to the right of the existing tower. The signal range from the new tower will be 15 miles in all directions. The signal range from the new tower and the signal range from the existing tower will have an overlap of 1 mile along the line connecting the 2 towers (shown below).



Identify an equation of the circle whose interior represents the signal range of the new tower, and refer to the towers as you explain the procedure you used to identify the equation.

(Note: In the standard  $(x,y)$  coordinate plane, a circle with center  $(h,k)$  and radius  $r$  is the graph of the equation  $(x - h)^2 + (y - k)^2 = r^2$ .)

## ACT Aspire Early High School Reading

**SOCIAL SCIENCE:** This passage is adapted from the article "Biscotti di Prato" by Pamela Sheldon Johns (©2011 by The Art of Eating).

A walk down the narrow, cobbled Via Ricasoli in the center of the small city of Prato, Italy, brings you to the Antonio Mattei bakery, where small groups of people are gathered, reluctant to leave the charming and elegant shop. The marble counters and wooden shelves are laden with the Italian cookies known as biscotti, and the air is rich with the aroma of eggs, sugar, and almonds. As you sink your teeth into the  
5 crisp exterior, the biscotti resist only slightly.

Antonio Mattei was a baker in Prato during the Risorgimento, the galvanizing mid-19th-century period of unification of Italy. His good friend Pellegrino Artusi described him as "that good man from Prato . . . he had the genius of his art and was honest and industrious." In 1858, Mattei created a cookie that was baked twice in his wood-burning oven. He found a following for these biscotti, and received important  
10 awards from the international fairs held in Florence in 1861, London in 1862, and Paris in 1867, launching the cookie into the greater world.

The word *biscotto*, "cooked twice," comes from the Latin *biscoctus*; a second slow baking is an ancient way to dry bread to preserve it. Mattei had based his recipe on a twice-baked, sourdough-leavened bread flavored with aniseed. At the turn of the last century, it was a food of peasant farmers, who bought  
15 it when they entered the city walls on Mondays to sell their wares. The same unsweetened rusks are still sold at the Mattei bakery, while for the biscotti we know today, Mattei developed an egg-based, sweetened dough.

Before Mattei died in 1885, he asked that his son Emilio leave the recipe for his beloved creation unchanged. The promise was kept even when the business was sold to a woman named Italia  
20 Ciampolini in 1904 and when it was inherited by Ernesto Pandolfini, an orphan she adopted. He continued to make Mattei's biscotti, and he added new recipes, such as the chewy *brutti buoni*, cookies made with chopped almonds and pine nuts in whipped egg whites, and the glorious filone candito, a brioche loaf filled with candied cherries and covered with a thin layer of almond paste. In 1961, Pandolfini's son Paolo and Paolo's cousin Renzo Guarducci took over, keeping the tradition as originally  
25 promised to Mattei.

Since 1991, the bakery has been overseen by Paolo's four children, who compare themselves to the four ingredients used to make biscotti. Francesco, the flour, manages the bakery and is in charge of quality control; Marcella, the almonds, handles the accounting; Elisabetta, the eggs, does the marketing; and Letizia, the sugar, is responsible for the design of the store and packaging. Francesco remembers, "I  
30 took my first steps in the rooms above this bakery. I have been breathing these aromas since I was born. My father left this work to me, and I had to continue. It was hard to be a young man with new ideas, but I knew I couldn't change anything." He has, however, introduced a separate label with innovative biscotti recipes and flavors, such as rose, pistachio, candied orange zest, and peperoncino.

1. The main purpose of the passage is to:

- A. explain how Ciampolini transformed an ailing biscotti bakery into a thriving business.
- B. relate the history of biscotti and of the bakery in which they were created.
- C. discuss how the differences among biscotti bakers reflect the national spirit of Italy.
- D. describe why Prato was the ideal location for biscotti to have been invented.

2. Beginning with the second paragraph (lines 6–11), the passage shifts from a:

- A. descriptive scene narrated in present tense to a historical summary narrated largely in past tense.
- B. specific description of a tourist destination to a general overview of local cuisine.
- C. picture of life in rural Italy to a discussion of how it changed during the Risorgimento.
- D. list of the variety of desserts offered at a bakery to an explanation of how one type of dessert is made.

3. In the passage, the comparison of the four Pandolfini children to the ingredients of biscotti most nearly suggests that, in overseeing the bakery, the four Pandolfini children have:
- A. played distinct but essential roles.
  - B. combined their ideas to create new recipes.
  - C. limited their involvement to baking.
  - D. retained the business methods used by Mattei.
4. As it is presented in the passage, Artusi's claim that Antonio Mattei "had the genius of his art" (line 8) most nearly means that Mattei:
- A. obtained the education necessary to become a baker.
  - B. relied on recipes invented by other famous bakers.
  - C. was nearing the end of his baking career.
  - D. possessed an immense gift for baking.
5. In the passage, the worldwide recognition that Antonio Mattei's biscotti received is most directly attributed to the:
- A. strength of Mattei's reputation in Prato.
  - B. awards Mattei received at international fairs.
  - C. positive reviews of tourists who visited Mattei's bakery.
  - D. popularity of Mattei's recipe among farmers from other countries.
6. According to the passage, the ancient technique of a second slow baking had historically been used to:
- A. improve bread's flavor.
  - B. help bread rise.
  - C. preserve bread.
  - D. soften bread.
7. Describe one similarity and one difference between how Antonio Mattei's biscotti were made and how the bread he based his biscotti on was made.

**8. Think about the preceding passage as you read the following excerpt.**

The third generation is a notoriously vulnerable juncture for a successful family business. The grandchildren of the founder often reach for far-fetched schemes—a fashion line, a hotel in Dubai—either because they're bored or because all the good jobs are already taken. When I asked Apollonia Poilâne how she intended to distinguish her regime at Poilâne, the bread company founded by her grandfather, she replied that she didn't think that way.

Her conservatism is born partly of reverence for her predecessors and partly of her perfectionism. She said, "My grandfather started this business eighty years ago. We are a local bakery. I am not so much interested in making a mark as in serving our clients with some very good-quality bread, which I pompously think we do. Poilâne bears my name. I am very proud of it, so I don't want to expand in a quirky or funny way that would devalue it."

—Adapted from "Bread Winner" by Lauren Collins (©2012 by Condé Nast)

**Francesco Pandolfini in the passage from "Biscotti di Prato" and Apollonia Poilâne in the excerpt from "Bread Winner" both take over leadership of a family bakery. Describe two ways in which their attitudes or approaches toward carrying on the tradition of a family business are similar and two ways in which their attitudes or approaches are different. Use details from both the passage and the excerpt to support your answer.**

# ACT Aspire Science

## Early High School

Students used a *viscometer* (a device that measures the viscosity of a substance) to study several liquids. The viscometer consisted of a tube to hold a liquid, a metal ball, and a magnetic pad that can hold or release the ball (see Figure 1).

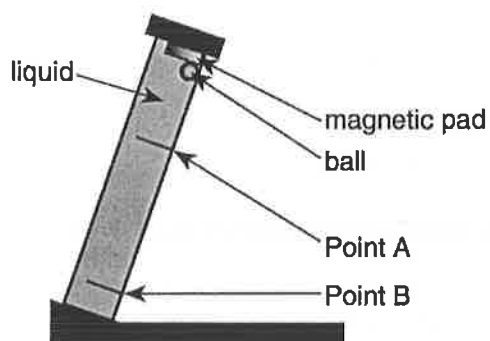


Figure 1

The liquid is added to the tube and allowed to become still. The cap, to which the magnetic pad and ball are attached, is fitted on the tube. The ball is then released by remote control from the pad, and the time it takes for the ball to roll from Point A to Point B (the *roll time*) is measured. Six liquids (Liquids A–F) of known viscosity (in centipoise, cp) at 25°C were supplied with the viscometer for use as standards (see Table 1).

Liquid	Viscosity (cp)
A	1
B	50
C	100
D	200
E	500
F	1,000

### Experiment 1

The roll time for each of Liquids A–F was measured at 25°C in the viscometer. The students prepared Figure 2 based on their results.

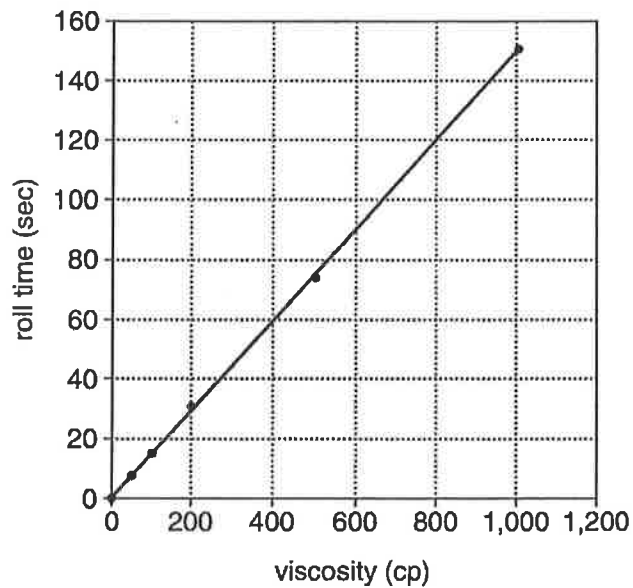


Figure 2

### Experiment 2

The roll time of several common liquids was measured at 25°C in the viscometer (see Table 2). (Note: SAE numbers refer to viscosity ratings set by the Society of Automotive Engineers.)

Liquid	Roll time (sec)
Corn syrup	12
Kerosene	2
H <sub>2</sub> O	1
SAE 10 motor oil	8
SAE 20 motor oil	30
SAE 30 motor oil	60
SAE 50 motor oil	180

1. Based on Experiments 1 and 2, the viscosity of SAE 30 motor oil at 25°C is closest to which of the following?
  - A. 30 cp
  - B. 60 cp
  - C. 200 cp
  - D. 400 cp

2. Based on Experiments 1 and 2, the viscosity of SAE 40 motor oil at 25°C would most likely be:

- A. lower than 200 cp.
- B. between 200 cp and 300 cp.
- C. between 300 cp and 400 cp.
- D. higher than 400 cp.

3. A student claimed that at 25°C, SAE 20 motor oil has a lower viscosity than does Liquid C. Based on the results of Experiments 1 and 2, explain why the student's claim was INCORRECT. As part of your explanation, give the viscosity of each liquid at 25°C.

4. A different liquid, Liquid Z, is tested as in Experiment 1, and its viscosity is determined to be 400 cp. Use Figure 1 to determine the approximate roll time for Liquid Z at 25°C. Then, identify the liquid in Table 2 that, at 25°C, has a viscosity closest to the viscosity of Liquid Z.



## **ACT Aspire Writing**

### **Early High School Analytical Expository Writing**

**It is wise to weigh our options carefully before making decisions, but waiting too long to decide can lead to missed opportunities. Write an essay in which you explain both the value and the challenge of carefully considering our options before deciding. Be sure to support your analysis with reasons and examples.**

## ACT Aspire Grade 10 Analytical Expository Writing

	<i>Analysis</i>	<i>Development</i>	<i>Organization</i>	<i>Language Use</i>
<b>Score: 6</b> Responses at this scorepoint demonstrate effective skill in writing an analytical essay	The writer generates an analysis that critically engages with the expository writing task. The response presents a complex analysis by critically addressing (a) implications and complications of the issue and/or (b) underlying values.	Ideas are thoroughly explained, with skillful use of supporting reasons and specific details. The writer's claims and specific support are well integrated.	The response exhibits a purposeful organizational strategy. Connections between and within paragraphs consistently clarify the relationships among ideas. A logical progression of ideas increases the effectiveness of the writer's argument.	The response demonstrates the ability to effectively convey meaning with clarity. Word choice is precise. Sentence structures are varied and clear. Voice and tone are appropriate for the analytical purpose and are maintained throughout the response. While a few errors in grammar, usage, and mechanics may be present, they do not impede understanding.
<b>Score: 5</b> Responses at this scorepoint demonstrate capable skill in writing an analytical essay	The writer generates an analysis that capably engages with the expository writing task. The response presents a somewhat complex analysis by discussing (a) implications and complications of the issue and/or (b) underlying values.	Ideas are capably explained, with purposeful use of supporting reasons and specific details. The writer's claims and specific support are sometimes integrated.	The response exhibits a clear organizational strategy. Connections between and within paragraphs clarify the relationships among ideas. A logical sequencing of ideas contributes to the effectiveness of the writer's argument.	The response demonstrates the ability to capably convey meaning with clarity. Word choice is sometimes precise. Sentence structures are often varied and clear. Voice and tone are appropriate for the analytical purpose and are maintained throughout most of the response. While errors in grammar, usage, and mechanics may be present, they do not impede understanding.
<b>Score: 4</b> Responses at this scorepoint demonstrate adequate skill in writing an analytical essay	The writer generates an analysis that adequately responds to the expository writing task. The response presents a clear but mostly simple analysis that may only recognize (a) implications and complications of the issue and/or (b) underlying values.	Ideas are adequately explained, with satisfactory use of supporting reasons and specific details.	The response exhibits a clear but simple organizational structure. Connections between and within paragraphs clarify the relationships among ideas. Ideas are logically grouped.	The response demonstrates the ability to adequately convey meaning. Word choice is usually clear. Sentence structures are occasionally varied and usually clear. Voice and tone are appropriate for the analytical purpose, but may be inconsistently maintained. While errors in grammar, usage, and mechanics are present, they rarely impede understanding.
<b>Score: 3</b> Responses at this scorepoint demonstrate some developing skill in writing an analytical essay	The writer generates a somewhat appropriate analysis in response to the expository writing task. The response may present analysis that is simplistic and somewhat imprecise.	Explanations of ideas are limited, but include some use of supporting reasons and relevant details.	The response exhibits some evidence of organizational structure. Connections between and within paragraphs sometimes clarify the relationships among ideas. Some ideas are logically grouped.	The response demonstrates some developing ability to convey meaning. Word choice is general and occasionally imprecise. Sentence structures show little variety and are sometimes unclear. Voice and tone are somewhat appropriate for the analytical purpose but are inconsistently maintained. Distracting errors in grammar, usage, and mechanics are present, and they sometimes impede understanding.
<b>Score: 2</b> Responses at this scorepoint demonstrate weak or inconsistent skill in writing an analytical essay	The writer generates an unclear or incomplete analysis in response to the expository writing task. The response demonstrates an unclear or partial understanding of the expository writing task.	Explanations of ideas are unclear or incomplete, with little use of supporting reasons or relevant details.	The response exhibits only a little evidence of organizational structure. Connections between and within paragraphs are often missing or poorly formed. Few ideas are logically grouped.	The response demonstrates a weak ability to convey meaning. Word choice is rudimentary and frequently imprecise. Sentence structures are often unclear. Voice and tone may not be appropriate for the analytical purpose. Distracting errors in grammar, usage, and mechanics are present, and they impede understanding.
<b>Score: 1</b> Responses at this scorepoint demonstrate little or no skill in writing an analytical essay	The writer does not generate an analysis that responds to the expository writing task. The response demonstrates little or no understanding of the expository writing task.	Ideas lack explanation, with virtually no use of supporting reasons or relevant details.	The response exhibits no evidence of organizational structure. Connections between and within paragraphs are rare. Ideas are not logically grouped.	The response demonstrates little or no ability to convey meaning. Word choice is imprecise and difficult to comprehend. Voice and tone are not appropriate for the analytical purpose. Sentence structures are mostly unclear. Errors in grammar, usage, and mechanics are pervasive and significantly impede understanding.
<b>Score: 0</b> Unscorable	The response is blank, voided, off-topic, illegible, or not written in English.			