This passage discusses the adoption of standardized, nationally-recognized time zones in the United States. Read this passage, then answer the questions that follow.

The Birth of Standard Time

by Joan Banks

In 1883, the New York Herald trumpeted the news: “The man who goes to church in New York today will hug himself with delight to find that the noon service has been curtailed to the extent of nearly four minutes, while every old maid on Beacon Hill in Boston, will rejoice tonight to discover that she is younger by almost 16 minutes.” It was November 18, 1883, and when the sun reached the 75th meridian, railway stations across the country adjusted their clocks to a national standard set for their areas. It was the birth of standard time. In the East this birth occurred at high noon. On the West Coast it was precisely three hours earlier: nine o’clock.

Standard time is something we take for granted, but prior to that momentous day in 1883, it didn’t exist. There were no time zones in the United States. Each town set its own time in relation to the position of the sun. Thus, particular time, like noon, made its way across the country minute by minute. It arrived at Buffalo, New York, nineteen minutes after gracing New York City. If you could have heard it, a continuous sound of bells chiming across the country would have signaled high noon for over four hours.

Before the Civil War (1861–1865), these time differences did not matter. It took two days to travel the ninety miles from Philadelphia to New York City. What did a few minutes’ difference make? People lived and worked by the sun. When the rooster crowed it was time to get up. When the sun set it was time to stop the chores and head inside, perhaps to bed.

The coming of the railroad changed that. This new transportation was faster, and more people traveled. With travel came the need to make train connections. Passengers might chug into a station on one train, only to find out their connection had just pulled out because its schedule was based on the time in a different home city. Travelers had to change their watches three times on the trip from New York to Boston if they hoped to make their connections. A trip from coast to coast required twenty changes to keep up with the various railroad times, and that was ignoring local times, which you almost certainly had to do. Michigan alone had 27 local times; Wisconsin had 38. Time chaos reigned.

So how did you know what time it was in the days before you could call for the time and temperature on your telephone? In some cities, jewelers had clocks that their customers set their watches by. If a town had several jewelers, there might be just as many local times. Such a situation existed in Kansas City. Someone suggested the best way to find out what time a train was arriving there was to stand on top of a hill and watch for it. To relieve the situation, the city fathers adopted a time ball system, similar to the one used to this day on New Year’s Eve in Times Square. At official noon, a large ball was dropped from a signal pole. If you could see it, you could set your watch.
Railroad men were particularly aware of the problem of nonstandardized time. But the first plan for standardization came from Charles F. Dowd, who wasn’t a railroad man at all, but the principal of a school for young ladies in Saratoga Springs, New York.

Dowd’s plan recommended dividing the country into four time zones. The boundaries of these zones were straight lines drawn down the map longitudinally, or north to south. He suggested letting towns and cities keep their own local times, an idea that required what he called his time adjuster. In it, he calculated the adjustment in minutes needed for 8,000 railroad stations throughout the United States. Thus, you could look up any of these stations in the adjuster, and it would show the number of minutes you had to add to his proposed standard time to come up with the local time.

William F. Allen, the managing editor of the Official Guide of the Railways, was also interested in standardizing time, and he sent out a request for ideas. Someone suggested using a single standard, like the time in Washington, D.C., for the entire country. Another idea proposed putting two sets of hands on all clocks, one indicating standard time, the other showing local time. Twenty-four hour time came up, but Allen rejected it because it would have made existing watches and clocks obsolete.

Someone mentioned Dowd’s plan to Allen, and eventually this was the one he recommended to the railroads, but with modifications. He suggested five time zones with irregular boundaries instead of the rigid ones Dowd had proposed. He also rejected the notion of the time adjuster. Doing away with local times promised less confusion.

On October 11, 1883, the members of the American Railway Association, who represented 78,000 miles of railroads, met and agreed to switch to a standard time on November 18.

Changing to standard time brought pundits out in full force. One newspaper editor wrote: “Railroad time is to be the time of the future. The sun is no longer to boss the job . . . . The sun will be requested to rise and set by railroad time. People will marry by railroad time, and die by railroad time. Ministers will be required to preach by railroad time—banks will open and close by railroad time.” Another newspaper said some people would be living a little of their lives over on November 18, while others would be pitched into the future.

It was not until March 19, 1918, that Congress passed the Standard Time Act, which gave the Interstate Commerce Commission the power to define the boundaries of the time zones and to make changes as necessary. It also provided for daylight saving time to conserve fuel and increase national efficiency.

Time zones in North America today are called Atlantic, Eastern, Central, Mountain, and Pacific. Each represents about 15 degrees of longitude, although their boundaries are irregular. From east to west, the time is about one hour earlier in each successive zone. Thus, if it is noon in Philadelphia, it is 11 A.M. in Memphis, 10 A.M. in Denver, and 9 A.M. in Fresno, California—respectively the 75th, 90th, 105th, and the 120th meridians west of Greenwich, England, which is considered the Prime or 0° meridian. Time is accordingly set at an artificial hour, but it makes life simpler and makes it possible to catch planes and trains on time.
The Birth of Standard Time

1. Read the following sentence from the passage.
   “From east to west, the time is one hour earlier in each successive zone.”
   What does the word successive mean in this context?
   A. alternating
   B. resulting
   C. standardized
   D. subsequent

2. Why did the railroads support the implementation of a national standard time?
   A. Standard time would facilitate train connections.
   B. Standard time would make trains run on time.
   C. They wanted people to travel by train at certain hours.
   D. They wanted railroad time to be the time of the future.

3. What is the author’s purpose in writing this passage?
   A. to support the establishment of standard time
   B. to criticize Dowd’s plan for standardizing time
   C. to highlight the importance of railroads to business
   D. to describe historical aspects of today’s time system

4. Read the following sentences.
   2. Each town sets its own local time.
   3. The American Railway Association meets and agrees to switch to standard time.
   Which list shows the correct order of the events that are presented in the passage?
   A. 2, 4, 3, 1
   B. 3, 2, 4, 1
   C. 2, 1, 4, 3
   D. 4, 3, 1, 2
5. Using at least one detail from the passage, explain how changes in technology brought about changes in lifestyles that made standard time necessary.

6. Using information from the passage, identify two proposals in Dowd’s plan and explain how Allen modified each proposal.
Key

1. **Answer = D** [ELA-1-H1: Using knowledge of word meaning and extending basic technical vocabulary, employing a variety of strategies (for example, contexts, connotations and denotations, word derivations, relationships, inferences)]
   
   **Achievement Level**—**Advanced**

2. **Answer = A** [ELA-7-H1: Using comprehension strategies (for example, synthesizing, critiquing) to evaluate oral, written, and visual texts] **Achievement Level**—**Mastery**

3. **Answer = D** [ELA-7-H3: Analyzing and evaluating the effects of an author’s life, culture, and philosophical assumptions as reflected in the author’s viewpoint (perspective)]
   
   **Achievement Level**—**Basic**

4. **Answer = A** [ELA-7-H1: Using knowledge of word meaning and extending basic technical vocabulary, employing a variety of strategies (for example, contexts, connotations and denotations, word derivations, relationships, inferences)]
   
   **Achievement Level**—**Approaching Basic**

5. **Exemplary Responses:**
   
   As train travel became more important for business, it became necessary to have standard time. Using local time meant that people kept missing train connections. **Details:**
   
   - Before the railroad, it didn’t matter if local time varied from city to city.
   - Before trains, if people traveled, it often took several days to reach their final destination, and they were able to adjust their clocks accordingly, using the sun.
   - With trains, traveling even short distances required travelers to change their clocks in accordance with local times.
   - Other text-based response.
The following pages include short-answer items that accompany the passage “The Birth of Standard Time.” The items and rubrics used to score each response are included below. Under each sample student response is an explanation of why each answer received the score it did.

Sample 1

**Standard 7:** Students apply reasoning and problem-solving skills to their reading, writing, speaking, listening, viewing, and visually representing.

**Benchmark ELA-7-H4:** Using analytical reasoning skills in a variety of complex oral, written, and visual texts

Using at least one detail from the passage, explain how changes in technology brought about changes in lifestyles that made standard time necessary.

**Scoring Rubric**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
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| 2     | Student response is complete. It  
  • explains how the arrival of trains created a need to standardize time  
  AND  
  • includes one relevant text-based detail in support. |
| 1     | Student response is partial. It  
  • explains how the arrival of trains created a need to standardize time but does not provide a relevant detail  
  OR  
  • provides a relevant text-based detail but fails to explain how the arrival of trains created a need to standardize time  
  OR  
  • demonstrates a limited awareness and/or may contain errors. |
| 0     | Student response is incorrect, irrelevant, too brief to evaluate, or blank. |
Supporting Examples:

Score Point 2

Using at least one detail from the passage, explain how changes in technology brought about changes in lifestyles that made standard time necessary.

The railroad was a change in technology. It was a new transportation that was faster and traveled by more people because different cities had different times. Train connections could not be made because of the many different schedules. Therefore, standardized time became necessary.

This response is complete and correct. It explains how the arrival of trains created a need to standardize time ("The railroad was a change in technology. It was a new transportation that was faster and traveled by more people.") and includes one relevant text-based detail in support ("different cities had different times, train connections could not be made because of the many different schedules. Therefore, standardized time became necessary.").

Score Point 1

Using at least one detail from the passage, explain how changes in technology brought about changes in lifestyles that made standard time necessary.

Before standardized time the trains could not make connections and after standardized time everything ran smoothly.

This response is partial. It uses passage information to explain how the arrival of trains created a need to standardize time ("Before standardized time the trains could not make connections") but does not provide a relevant detail in support.
Sample 2

Standard 7: Students apply reasoning and problem-solving skills to their reading, writing, speaking, listening, viewing, and visually representing.

Benchmark ELA-7-H1: Using comprehension strategies (for example, synthesizing, critiquing) to evaluate oral, written, and visual texts

Using information from the passage, identify two proposals in Dowd’s plan and explain how Allen modified each proposal.

Scoring Rubric

<table>
<thead>
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</table>
| 2     | Student response is complete. It  
|       | • accurately identifies two proposals of Dowd’s plan  
|       | AND  
|       | • explains the modifications Allen made to each using relevant text-based information from the passage. |
| 1     | Student response is partial. It  
|       | • accurately identifies one of Dowd’s recommendations and explains the modification made to it by Allen  
|       | OR  
|       | • accurately identifies two of Dowd’s proposals but gives only one or no modifications from Allen  
|       | OR  
|       | • gives only Allen’s modifications  
|       | OR  
|       | • demonstrates a limited awareness and/or may contain errors. |
| 0     | Student response is incorrect, irrelevant, too brief to evaluate, or blank. |

Exemplary Responses:

Dowd recommended

• dividing the country into four time zones with straight lines north and south (counted as one recommendation only—do not give credit for four time zones and then give more credit for straight lines; they are part of the same recommendation),  
• letting cities keep local times and use a time adjuster to calculate standard time.

Allen’s modifications included

• changing the time zones from four to five with irregular boundaries (counted as one recommendation only),  
• eliminating the time adjuster and local times.
Score Point 0

Using at least one detail from the passage, explain how changes in technology brought about changes in lifestyles that made standard time necessary.

The use of trains brought forward the need for a better lifestyle. The better technology gets, the better people lifestyles will get.

This response is incorrect. It does not explain how the arrival of trains created a need to standardize time nor include a relevant detail in support.
Supporting Examples:

Score Point 2

Using information from the passage, identify two proposals in Dowd’s plan and explain how Allen modified each proposal.

Dowd’s plan: recommended doing two things: one was dividing the nation into four time zones and the other is using a time adjustor. Allen modified his idea by suggesting fine time zones with irregular boundaries and doing away with the time adjustor.

This response is correct and complete. Using information from the passage, it accurately identifies two proposals of Dowd’s plan and modifications Allen made.

Dowd’s proposals: one, “dividing the nation into four time zones” and two, “using a time adjustor.”

Allen’s modifications: one, “dividing the nation into four time zones with irregular boundaries” and two, “doing away with the time adjustor.”

Score Point 1

Using information from the passage, identify two proposals in Dowd’s plan and explain how Allen modified each proposal.

Dowd recommended dividing the country into four time zones; Allen modified it to five different zones. Another proposal was to have 24 hours, but Allen said “no” because it would make existing clocks and watches obsolete.

This response is partial. It identifies one of Dowd’s recommendations (“recommended dividing the country into four time zones”) and the modification made to it by Allen (“modified it to five different zones”).
Score Point 0

Using information from the passage, identify two proposals in Dowd's plan and explain how Allen modified each proposal.

Two proposals in Dowd's plan were that he put longitudinal lines on a map and road time zones and he 8,000 railroads. Allen was interested in standardizing time.

This response is incorrect because it does not correctly identify any proposals from Dowd's plan or any modifications Allen made.