
Now here was something nobody had ever seen before. The photograph that began appearing on the front pages of newspapers around the world in the first weeks of 1896 showed an image of a hand, more or less. Less, because this hand seemed to lack skin—or at least its outer layers of flesh and blood and tendons had been reduced to a presence sufficiently shadowy so as to allow a look beneath them. And more, because of what that look within revealed: the intricate webwork of bones that previously had been solely the province of the anatomist.

The hand belonged to the wife of Wilhelm Conrad Rontgen, a professor at the University of Wurzburg in Germany. On November 8, 1895, while working alone in his darkened laboratory, Professor Rontgen had noticed a seemingly inexplicable glow. On closer inspection, this glow revealed mysterious properties. For the next several weeks Rontgen worked in secrecy, strictly adhering to the method that had initiated the Scientific Revolution more than two centuries earlier and had sustained it ever since: He made sure that anyone else could use a Hittorf-Crookes tube and a Ruhmkorff coil to produce and reproduce the effect he’d detected. Sometimes his wife, Bertha, would ask why he was spending so much time in his laboratory, and he would answer that he was working on something that, if word got out, would have people saying, “*Der Rontgen ist wohl verruckt geworden*” (Rontgen has probably gone crazy).

At last Rontgen satisfied himself that his discovery was legitimate—that he hadn’t somehow interpreted the date. On December 22, he invited Bertha to join him in the laboratory, where he asked her to insert her hand, for fifteen minutes, between the tube and a photographic plate. As she did so, something happened—something he’d witnessed for himself numerous times now something he still couldn’t explain. A substance passed between the tube and the plate—*must* have passed, because even though the substance itself was invisible, the effect was undeniable. An image of his wife’s hand, to her horror, was slowly burning itself into existence. On New Year’s Day, Rontgen went for a walk with Bertha, during which he mailed to colleagues copies of this photograph as well as his preliminary report, “*Eine neue Art von Strahlen*” (“*A New Kind of Ray*”)—what Rontgen, in a footnote, christened “X rays,” because of their mysterious nature. On the way to the mailbox, Rontgen turned to Bertha, whose hand—more or less, and complete (so to speak) with wedding ring—would soon be immortalized, and said, “*Now the devil will have to be paid.*”

The first public news account appeared on January 5, after a professor of physics at the University of Vienna received a copy of the paper and photograph and passed them along to
colleagues, who in turn contacted the editor of the *Wiener Presse*. From there the news spread rapidly: the *London Daily Chronicle* on January 6, the *Frankfurter Zeitung* on January 7. “Men of science in this city,” began an article in *The New York Times* a few days later, “are awaiting with the upmost impatience the arrival of European technical journals” . . .

1. Answer both parts of the question below.

   The passage discusses the work of Wilhelm Conrad Rontgen. Although Rontgen said that people would be saying that he had probably gone crazy, what phrase suggests that he was working very scientifically?

   A. here was something nobody had ever seen before
   B. Rontgen had noticed a seemingly inexplicable glow
   C. strictly adhering to the method that had initiated the Scientific Revolution
   D. he would answer that he was working on something

   Which sentence in the passage implies that Rontgen thought his discovery would be important to the scientific community?

   A. “At last Rontgen satisfied himself that his discovery was legitimate—that he hadn’t somehow is interpreted the data.”
   B. “The hand belonged to the wife of Wilhelm Conrad Rontgen, a professor at the University of Wurzburg in Germany.”
   C. “And more, because of what that look within revealed: the intricate webwork of bones that previously had been solely the province of the anatomist.”
   D. “On New Year’s Day, Rontgen went for a walk with Bertha, during which he mailed to colleagues copies of this photograph as well as his preliminary report, “Eine neue Art von Strahlen” (“A New Kind of Ray”)—what Rontgen, in a footnote, christened “X rays,” because of their mysterious nature.”

2. Read the following excerpt and then answer both parts of the question below.

   The hand belonged to the wife of Wilhelm Conrad Rontgen, a professor at the University of Wurzburg in Germany. On November 8, 1895, while working alone in his darkened laboratory, Professor Rontgen had noticed a seemingly inexplicable glow. On closer inspection, this glow revealed mysterious properties.

   In the excerpt above, “inexplicable” most nearly means

   A. accountable
   B. perplexing
   C. understandable
   D. coherent
Which word from the excerpt most clarifies the meaning of “inexplicable” in the context above?

A. “mysterious”
B. “inspection”
C. “darkened”
D. “glow”

3. Read the following excerpt and then answer both parts of the questions below.

On the way to the mailbox, Rontgen turned to Bertha, whose hand—more or less, and complete (so to speak) with wedding ring—would soon be immortalized, and said, “Now the devil will have to be paid.”

The first public news account appeared on January 5, after a professor of physics at the University of Vienna received a copy of the paper and photograph and passes them along to colleagues, who in turn contacted the editor of the Wiener Presse. From there the news spread rapidly: the London Daily Chronicle on January 6, the Frankfurter Zeitung on January 7. “Men of science in this city,” began an article in The New York Times a few days later, “are awaiting with the utmost impatience the arrival of European technical journals” . . .

According to the excerpt above, what happened after Rontgen mailed his report? Did he anticipate any of what happened? Write your answer in the box below.
Underline two words or phrases in the excerpt above that support your answer.

**Essential Questions**

4. How does determining and analyzing the meaning and uses of words in text help with comprehension?

5. How does the structure of an argument affect the meaning of a text as a whole?

6. How do you create a valid argument?
In the passage, the author reports “Sometimes his [Wilhelm Conrad Rontgen] wife, Bertha, would ask why he was spending so much time in his laboratory, and he would answer that he was working on something that, if word got out, would have people saying, “Der Rontgen ist wohl verrucket geworden” (“Rontgen has probably gone crazy”).

Write an essay in which you either support or oppose the idea that “Rontgen has probably gone crazy.” Be sure to consider views opposed to yours and explain why your position is stronger.

Your essay should
- Use formal language to present a coherent and clear position on the topic
- Clearly distinguish your view from the opposing view and offer compelling reasons why your view is superior
- Cite evidence, including quotations and details from the passage
- Present a clear conclusion reached through the analysis of the information presented
- Use correct spelling, grammar, and punctuation
Scoring Guide – Grade 11 Unit 3 Pre-Assessment

1. C, D
2. B, A
3. A professor of physics received the report and passed it along. Newspapers all over from Germany, to England, to the United States published information regarding the report. Rontgen anticipated some excitement over the report because he told his wife after he mailed it “Now the devil will have to be paid.”

Underline the quote and any of the words or phrases regarding the newspaper publication.

Questions 4, 5, and 6 are the standards-based Essential Questions for the unit. Review responses to determine what students already know and understand.

Constructed Response – Use rubric below.
<table>
<thead>
<tr>
<th>Construct Measured</th>
<th>Score Point 4</th>
<th>Score Point 3</th>
<th>Score Point 2</th>
<th>Score Point 1</th>
<th>Score Point 0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading:</strong> comprehension of key ideas and details</td>
<td>The response provides an accurate analysis of what the text says explicitly and inferentially and cites convincing textual evidence to support the analysis, showing full comprehension of complex ideas expressed in the text(s).</td>
<td>The response provides an accurate analysis of what the text says explicitly and inferentially and cites textual evidence to support the analysis, showing extensive comprehension of ideas expressed in the text(s).</td>
<td>The response provides a mostly accurate analysis of what the text says explicitly or inferentially and cited textual evidence, shows a basic comprehension of ideas expressed in the text(s).</td>
<td>The response provides a minimally accurate or inaccurate analysis of what the text says, and cited textual evidence shows limited or inaccurate comprehension of ideas expressed in the text(s).</td>
<td>No response; or the response is:</td>
</tr>
<tr>
<td><strong>Specific scoring notes:</strong></td>
<td>The response presents a clearly articulated and defended claim that supports or opposes the idea that “Rontgen has probably gone crazy”; the response fairly and coherently evaluates the opposing position and demonstrates the superiority of the adopted position by citing relevant and sufficient reasons and evidence; the response makes effective use of evidence presented in the text in both defending the adopted position and critiquing the opposing position.</td>
<td>The response presents a claim either for or against the idea that “Rontgen has probably gone crazy”; the response considers the opposing position and asserts the superiority of the adopted position; the response refers to material presented in the text in defending the adopted position.</td>
<td>The response fails to support a clear position on the topic or distinguish that position from any other.</td>
<td><strong>- unintelligible or undecipherable</strong></td>
<td><strong>- not written in English</strong></td>
</tr>
<tr>
<td><strong>- too limited to evaluate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Writing: development of ideas | The response addresses the prompt and provides effective and comprehensive development of the claim, topic and/or narrative elements by using clear and convincing reasoning, details, text-based evidence, and/or description; the development is consistently appropriate to the task, purpose, and audience. | The response addresses the prompt and provides effective development of the claim, topic and/or narrative elements by using clear reasoning, details, text-based evidence, and/or description; the development is largely appropriate to the task, purpose, and audience. | The response addresses the prompt and provides some development of the claim, topic and/or narrative elements by using some reasoning, details, text-based evidence, and/or description; the development is somewhat appropriate to the task, purpose, and/or audience. | The response addresses the prompt and develops the claim, topic and/or narrative elements minimally by using limited reasoning, details, text-based evidence and/or description; the development is limited in its appropriateness to the task, purpose, and/or audience. | No response; or the response is  
- unintelligible or undecipherable  
- not written in English  
- too limited to evaluate |
| Writing: organization | The response demonstrates purposeful coherence, clarity, and cohesion and includes a strong introduction, conclusion, and a logical, well-executed progression of ideas, making it easy to follow the writer’s progression of ideas. | The response demonstrates a great deal of coherence, clarity, and cohesion, and includes an introduction, conclusion, and a logical progression of ideas, making it fairly easy to follow the writer’s progression of ideas. | The response demonstrates some coherence, clarity, and cohesion, and includes an introduction, conclusion, and logically grouped ideas, making the writer’s progression of ideas somewhat discernible but not obvious. | The response demonstrates limited or no coherence, clarity, and cohesion, making the writer’s progression of ideas somewhat or entirely unclear. | No response; or the response is  
- unintelligible or undecipherable  
- not written in English  
- too limited to evaluate |
| Writing: clarity of language | The response establishes and maintains an effective style, while attending to the norms and conventions of the discipline. The response uses precise language consistently, including descriptive words and phrases, sensory details, linking and transitional words, | The response establishes and maintains an effective style, while attending to the norms and conventions of the discipline. The response uses mostly precise language, including descriptive words and phrases, sensory details, linking and transitional words, | The response establishes and maintains a mostly effective style, while attending to the norms and conventions of the discipline. The response uses some precise language, including descriptive words and phrases, sensory details, linking and | The response has a style that has limited or impaired effectiveness, with limited or highly deficient awareness of the norms of the discipline. The response includes limited if any descriptions, sensory details, linking or transitional words, words to indicate tone, or domain- | No response; or the response is  
- unintelligible or undecipherable  
- not written in English  
- too limited to evaluate |
<table>
<thead>
<tr>
<th></th>
<th>words to indicate tone, and/or domain-specific vocabulary.</th>
<th>words to indicate tone, and/or domain-specific vocabulary.</th>
<th>transitional words, words to indicate tone and/or domain-specific vocabulary.</th>
<th>specific vocabulary.</th>
</tr>
</thead>
</table>
| **Writing:** knowledge of language and conventions | The response demonstrates command of the conventions of standard English consistent with effectively edited writing. Though there may be a few minor errors in grammar and usage, meaning is clear throughout the response. | The response demonstrates a generally consistent command of the conventions of standard English. There are a few patterns of errors in grammar and usage that may infrequently impede understanding. | The response demonstrates limited command of the conventions of standard English. There are multiple errors in grammar and usage demonstrating minimal control over language. There are multiple distracting errors in grammar and usage that sometimes impede understanding. | No response; or the response is
- unintelligible or undecipherable
- not written in English
- too limited to evaluate |