Ideas Under Scrutiny

Evidence, debate, and freedom in European science

MWH.C.5.2.E "Describe the European intellectual revolution and the ideal of academic freedom, including leading figures (e.g., Marie Curie, Charles Darwin, Gregor Mendel)."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline how each scientist gathered evidence, circle an idea that challenged earlier beliefs, and number two details that show why academic freedom matters.

When Evidence Changed Minds

1. During the nineteenth century, European thinkers increasingly tested claims about nature through observation and experiments rather than accepting an authority's explanation. This shift was part of a wider intellectual revolution, but it did not mean that every scholar agreed or that earlier Europeans never experimented. It changed how claims could earn trust: researchers collected evidence, shared methods, and faced criticism. Academic freedom supported this work by allowing scholars to investigate and publish findings, even when their conclusions challenged powerful beliefs.

2. Charles Darwin studied living things during a voyage aboard HMS Beagle and later compared evidence from fossils, breeding, and species. In 1859, he argued that natural selection helps explain how species change over generations. His theory challenged common views that species were fixed, stirring public debate. Gregor Mendel grew pea plants and counted how traits appeared in offspring. His experiments revealed patterns of inheritance, although scientists largely overlooked his work until around 1900.

3. Marie Curie worked in Paris, where she and Pierre Curie investigated radiation. She helped discover the elements polonium and radium, showing that some atoms emit radiation, a finding that changed ideas about matter. As a woman, she faced barriers to scientific careers despite winning two Nobel Prizes. Her story shows why academic freedom involves more than permission to disagree: people also need fair access to study, resources, and a chance to be heard.

2 ANSWER WITH EVIDENCE

Use the passage

1. How did the intellectual revolution change the way a claim about nature could earn trust?

2. How did Darwin use evidence to challenge a common view of species?

3. What did Mendel's method reveal, and what does the delay in recognizing his work show about new ideas?

4. How does Curie's experience show that academic freedom involves more than permission to publish?

3 YOUR TURN

Your own words

Write a four-sentence charter for a research institute. Give two rules that protect academic freedom, explain how they would help two people in the passage, and name one duty researchers still have.

ANSWER KEY

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HIGH SCHOOL · MWH.C.5.2.E

PART 1 · READ AND MARK

Underline how each scientist gathered evidence, circle an idea that challenged earlier beliefs, and number two details that show why academic freedom matters. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How did the intellectual revolution change the way a claim about nature could earn trust?	**Researchers earned trust by collecting evidence, sharing methods, and facing criticism rather than relying only on authority.**
2	How did Darwin use evidence to challenge a common view of species?	**He compared evidence from fossils, breeding, and species, then argued that natural selection helps explain change over generations, challenging the view that species were fixed.**
3	What did Mendel's method reveal, and what does the delay in recognizing his work show about new ideas?	**Counting traits in pea plant offspring revealed patterns of inheritance. Scientists largely overlooked his findings until around 1900, showing that evidence may not gain attention right away.**
4	How does Curie's experience show that academic freedom involves more than permission to publish?	**Curie faced barriers as a woman. Scholars also need fair access to study, resources, and opportunities to be heard.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Our institute will allow researchers to publish evidence-based findings even when others object. It will give women and men equal access to laboratories and equipment. The first rule would let Darwin defend his ideas openly, while the second would give Curie fair access to research. Researchers must explain their methods so others can examine their claims.

Accept other accurate links between evidence, challenges to established views, and academic freedom. For Part 3, look for two distinct protections, connections to two figures, and a responsibility tied to sound research.