

Name _____

Einstein: The Genius Behind the Theory of Relativity

Open-Ended Response Answer Key

1. Albert Einstein's childhood curiosity was instrumental in his later achievements as a scientist and thinker. His insatiable curiosity drove him to question the world around him and explore complex ideas. Curiosity is a driving force in scientific exploration because it motivates individuals to seek answers, experiment, and make new discoveries. For example, Einstein's curiosity about the nature of light and motion led to his development of the theory of relativity.
2. Albert Einstein's pursuit of physics and mathematics outside of traditional education allowed him to follow his own intellectual path. Traditional education may not have been sufficient for him because it often emphasizes rote memorization and conformity, while Einstein thrived on independent exploration and critical thinking. His unique approach allowed him to develop groundbreaking theories and challenge established scientific paradigms.
3. The Swiss Patent Office provided Albert Einstein with a stable job and the time to contemplate scientific ideas during his free time. This period allowed him to conduct thought experiments, which were crucial for developing his theories. It provided him with financial security while pursuing his scientific interests, making it a pivotal time in his career.
4. The general theory of relativity proposed by Albert Einstein expanded upon the special theory of relativity by introducing the concept of gravity as the warping of spacetime by mass. It took time for the scientific community to accept it because it challenged existing theories of gravity, such as Newton's law of universal gravitation. Experimental evidence, such as the bending of light by gravity during a solar eclipse, eventually confirmed Einstein's theory, leading to its acceptance. Additionally, the mathematical complexity of the theory made it difficult for some to grasp initially.

