Teacher Answer Key

Case Study

1. Maya applied the same principles as the scientific method: she questioned the claim, consulted experts, tested the evidence, and followed where the facts led rather than accepting the exciting story at face value. Her skepticism was essential because it drove her to verify the artifact rather than report an unconfirmed claim.

2. Whitmore and the public wanted the runestone to be real because it was an exciting discovery that would rewrite American history. This desire to believe — similar to the confirmation bias described in the Piltdown case — made people accept the artifact without demanding proper documentation or independent authentication.

Multiple Choice

1. A

2. A

3. B

Matching

1-B, 2-D, 3-E, 4-A, 5-C

Fill-in-the-Blank

1) Piltdown Man, 2) peer review, 3) forgery

Short Answer (Sample Responses)

Q1: British scientists wanted to believe that a major evolutionary discovery had been made in England, which made them less critical of the evidence. This confirmation bias led them to accept Piltdown Man as genuine and dismiss the skeptics who raised legitimate doubts about the skull and jawbone combination.

Q2: The self-correcting nature of science means that even when errors or frauds enter the record, the scientific process eventually identifies and corrects them. Piltdown was exposed by better testing methods, the Cardiff Giant was debunked by expert examination, and the James Ossuary triggered rigorous chemical and microscopic analysis.

Q3: Peer review protects science by requiring independent experts to scrutinize research before it is accepted. When peer review fails — as with Piltdown, where access to specimens was restricted and skeptics were ignored — false claims can persist for decades, misdirecting research and wasting resources.