Teacher Answer Key

Case Study

1. Officials skipped ten days because the older Julian calendar had drifted from the true tropical year, so dates no longer matched the seasons; removing days realigned the calendar with Earth's actual orbital position.

2. Earth's motion did not change—only the labels did. The adjustment shows that calendars are human-made systems laid over physical time, and they sometimes need correction to match the planet's real orbit.

Multiple Choice

1. C

2. B

3. C

Matching

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

Fill-in-the-Blank

1) Gregorian, 2) year, 3) calendar

Short Answer (Sample Responses)

Q1: Since the real year is about 365.24 days long, using exactly 365 days every year causes the calendar to slowly slide away from the seasons; over many years, months would no longer match expected weather or equinoxes without leap-day corrections.

Q2: Examples: Lunar New Year is tied to specific new moons after the winter solstice; the Islamic New Year moves through the seasons because it follows a purely lunar calendar; Jewish New Year uses a lunisolar system that balances moon months with solar alignment.

Q3: Students might say that midnight on January 1 is a symbolic reset in our numbering of orbits, not a physical reset in Earth's motion; understanding the tropical year highlights that the orbit is continuous and our "New Year" is a cultural bookmark placed on that path.