

Tornadoes: Cause Analysis Answer Key

Major Causes (✓):

1. ✓ Warm, moist air colliding with cold, dry air - creates instability.
2. ✗ Calm, steady winds - no wind shear, so little chance of rotation.
3. ✓ Strong wind shear - tilts and spins air, critical for tornadoes.
4. ✓ Rising warm air/updrafts - help storms grow and rotate.
5. ✗ Dry, hot desert day - not enough moisture or instability for tornadoes.
6. ✓ Supercell with rotating updraft - most common tornado "parent storm."
7. ✗ Light drizzle - not severe enough for tornado formation.
8. ✓ Seasonal contrasts in spring/early summer - create the right ingredients for tornado outbreaks.

Sample Extension Response:

The two most important conditions are strong wind shear and the collision of warm, moist air with cold, dry air. Without these, the atmosphere would not have the instability and rotation needed to form a tornado. They are the key ingredients that set the stage for violent storms.