Name _____

Shaking Grounds: The Causes of Earthquakes

Open-Ended Response Answer Key

1. Monitoring and studying plate boundaries are essential for predicting earthquake hazards because most earthquakes occur at these boundaries. By understanding plate movements and stress accumulation, scientists can provide early warnings to help communities prepare and respond effectively.
2. One example of significant damage caused by a transform boundary earthquake is the 1906 San Francisco earthquake. Lessons learned from this event include the need for earthquake-resistant building design, better emergency response plans, and improved infrastructure resilience.
3. Engineers and architects design earthquake-resistant buildings by incorporating strategies such as reinforced foundations, flexible materials, and dampers that absorb seismic energy. They also follow building codes specific to earthquake-prone areas and conduct seismic simulations to test structures' resilience.
4. Early warning systems detect initial seismic waves and send alerts to people in affected areas, giving them precious seconds to take cover or evacuate. These systems work by using networks of seismometers to monitor ground motion, and they can significantly reduce the impact of earthquakes on lives and property.