

Name _____

The Dynamic Duo of Energy: Kinetic and Potential

Open-Ended Response Answer Key

1. Modern electric and hybrid cars use regenerative braking to recover kinetic energy during braking, converting it back into electrical energy to recharge the batteries. This process improves overall energy efficiency and reduces the need for frequent charging.
2. Regenerative braking systems capture and store energy that would otherwise be lost as heat during braking. By recycling this energy, vehicles can increase fuel efficiency and reduce greenhouse gas emissions, contributing to a more sustainable transportation system.
3. Roller coasters have multiple safety mechanisms, including brakes and restraint systems, to ensure that the conversion of energy is controlled and gradual. Engineers carefully calculate the coaster's design to manage speed and forces, providing both an exhilarating and secure ride.
4. In a future with renewable and sustainable energy sources, transportation and amusement park rides would likely transition to electric power, reducing environmental impacts. The benefits would include cleaner air, reduced dependence on fossil fuels, and a more sustainable approach to energy use.

