

Roller Coaster Lockdown

Kinetic & Potential Energy and Heat Transfer

Name: _____ Date: _____

Circle the best answer for 1 and 2. Answer 3 in complete sentences.

1. Where does a roller coaster car have the most kinetic energy?

- (A) At the top of the first hill
- (B) At the bottom of the first hill
- (C) Stopped at the station
- (D) Halfway up the second hill

2. Which change would give a car the MOST gravitational potential energy?

- (A) Lower hill, less mass
- (B) Higher hill, more mass
- (C) Lower hill, more mass
- (D) Higher hill, less mass

Read: A student tested three pot handles on a hot stove for 5 minutes: metal handle = 58 °C, wooden handle = 29 °C, plastic handle = 31 °C. The room was 22 °C.

3. Which handle material should a cook choose, and why? Use the data and a type of heat transfer.

Use Claim-Evidence-Reasoning: Claim, Evidence, Reasoning.

Roller Coaster Lockdown: Exit Ticket

Total: 5 points. Mastery: 4 or more.

#	Answer	Points
1	(B) At the bottom of the first hill	1 point
2	(B) Higher hill, more mass	1 point
3	Claim: The cook should choose a wooden handle. Evidence: After 5 minutes the wooden handle was only 29 °C, while the metal handle reached 58 °C. Reasoning: Heat moves from the hot pot into the handle by conduction. Metal is a good conductor, so heat travels through it quickly. Wood is an insulator, so it slows conduction and stays safe to touch.	3 points: Claim: wood (or plastic) handle; Evidence: compares temperatures; Reasoning: conduction; conductor vs. insulator.