

The Old Truck on Hansen's Hill



Figure 1: A weathered pickup truck parked on a gravel roadside at the crest of a hill, hood open with engine visible, steam rising faintly from the

Priya and Dax pushed Dax's stalled truck up the shoulder of Hansen's Hill, engine ticking as it cooled. "Gas has all this stored chemical energy," Priya panted, "and the engine's supposed to turn it into motion." "Supposed to," Dax laughed. "Half of it just leaves as heat off the radiator." At the crest, they let the truck roll down, picking up speed. "That's kinetic energy building as height drops," Priya said. "Potential turning into motion, roughly mgh becoming half mv squared." "So nothing's ever perfectly efficient?" "Never. Some energy always scatters as heat, every conversion. Watt figured that out building better steam engines long before anyone wrote the laws down." Dax patted the hood. "Old truck, ancient problem." They coasted.

Words to know

- **Kinetic energy:** Energy an object has because it is moving.

- **Potential energy:** Stored energy due to position or condition, such as height above the ground or chemical bonds.
- **Efficiency:** The proportion of total energy input that becomes useful output in a device.
- **Thermodynamics:** The study of energy, heat, and work, including the laws describing how energy is conserved and converted.

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