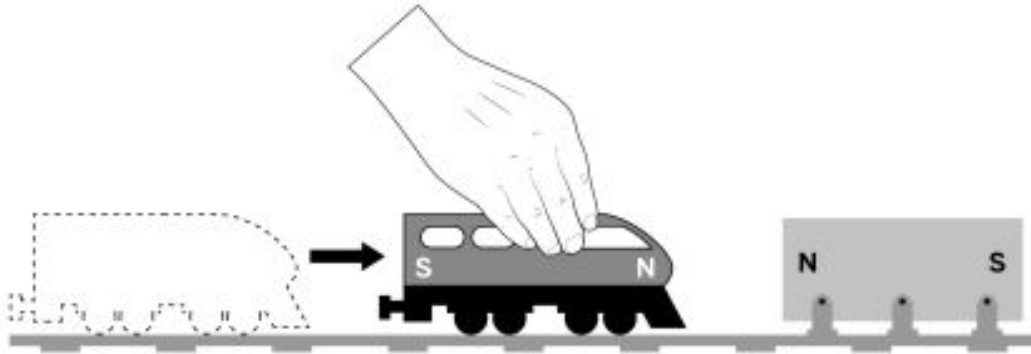


ERROR ANALYSIS ANSWER KEY

The letters *N* and *S* show the magnetic poles.

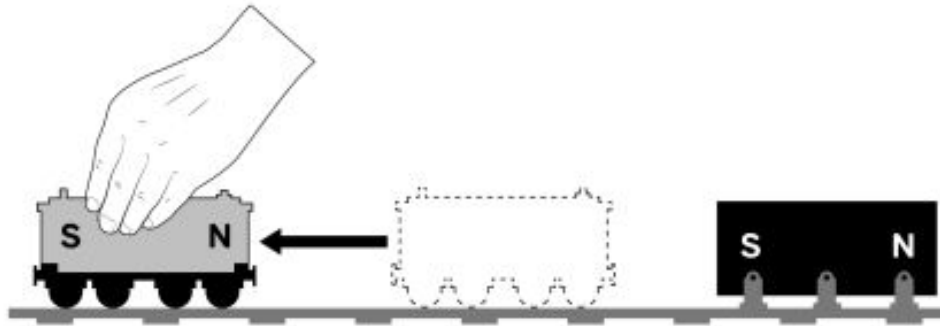


8. Katrina moves a magnetic toy train toward a magnet that cannot move. What happens to the potential energy in the system of magnets during the move?

- (a) The potential energy increases because the train moves against the magnetic force.
- (b) The potential energy decreases because the train moves against the magnetic force.
- (c) The potential energy decreases because the train moves in the same direction as the magnetic force.
- (d) The potential energy does not change because the magnets in the system do not change.

CORRECT ANSWER = A

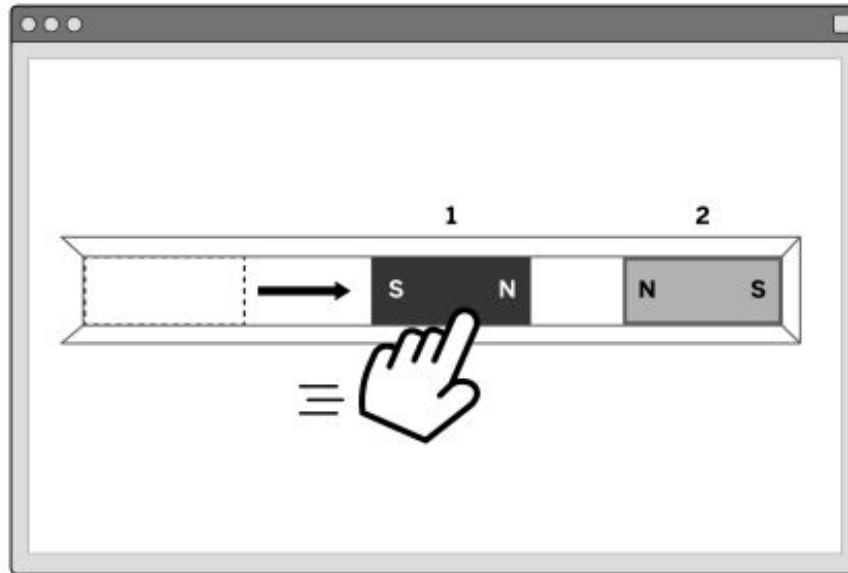
The letters *N* and *S* show the magnetic poles.



15. Trevor moves a magnetic toy train away from a magnet that cannot move. What happens to the potential energy in the system of magnets during the movement?
- (a) The potential energy decreases because the train moves in the same direction as the magnetic force.
 - (b) The potential energy decreases because the train moves against the magnetic force.
 - (c) The potential energy increases because the train moves against the magnetic force.
 - (d) The potential energy does not change because the magnets in the system do not change.

CORRECT ANSWER = C

The letters *N* and *S* show the magnetic poles.



11. In a computer simulation, Juan moves a magnet (Magnet 1) closer to another magnet (Magnet 2) that cannot move. Which statement accurately describes the change in potential energy?

- (a) The potential energy does not change because the magnets in the system do not change.
- (b) The potential energy increases because Magnet 1 moves against the magnetic force.
- (c) The potential energy decreases because Magnet 1 moves against the magnetic force.
- (d) The potential energy decreases because Magnet 1 moves in the same direction as the magnetic force.

CORRECT ANSWER = B

The letters *N* and *S* show the magnetic poles.



16. An engineer is experimenting with two identical magnetic roller coaster cars on different sides of a center magnet that cannot move. The engineer is planning to move one car one space. Which movement will result in the largest increase in potential energy?
- (a) Moving Car 1 one space toward the center magnet.
 - (b) Moving Car 1 one space away from the center magnet.
 - (c) Moving Car 2 one space away from the center magnet.
 - (d) All these movements will result in the same change in potential energy because they each move a roller coaster car the same distance.

CORRECT ANSWER = B