Compare Engineering Solutions

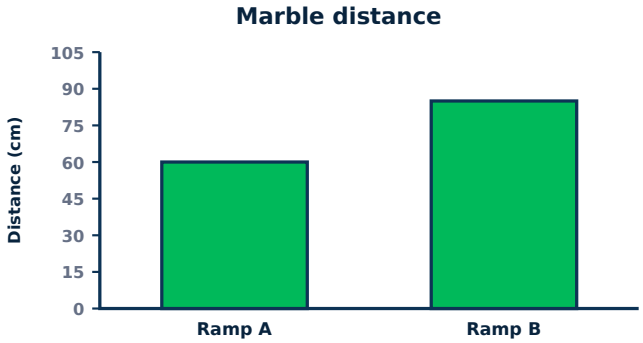
Grade 3 Science Worksheet

Name _____ Date _____

Circle the answer.

1. Which data table would help compare parachute designs fairly?
   how many students built each one
   fall time for each parachute from the same height
   fall time for each parachute from different heights
   the size of each parachute only

2. The goal is a ramp that rolls a marble at least 75 cm. Use the graph. Which ramp meets the goal?



   neither ramp Ramp B Ramp A both ramps

3. Design X uses expensive material and holds the most weight. Design Y uses cheap material, holds a little less, and still meets the goal. Which better balances cost and performance?
   both are equally good Design X neither should be used Design Y

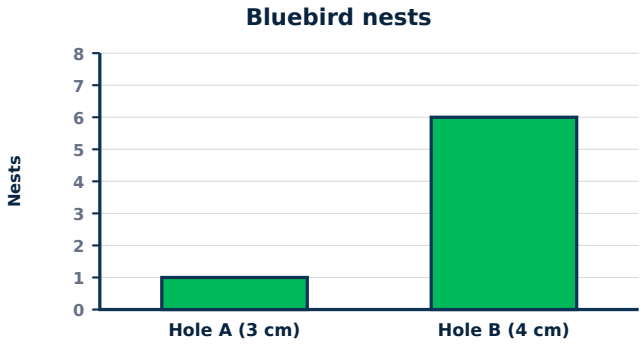
4. A bridge redesign replaces flat paper beams with folded beams and holds twice as many washers. What does this show?
   folding the paper made the beams stronger
   washer count does not show strength
   the bridge became weaker
   the bridge needs more washers

5. Two students test the same parachute but drop it from different heights. Why are their results hard to compare?
   the drop heights were not the same
   the students used the same conditions
   parachutes fall the same from any height
   the parachutes were the same design

6. Two raft designs are tested in the same tub, with pennies added one at a time to each. Why is this a useful comparison?
 both rafts are tested the same way
 the rafts are in different tubs
 the rafts are tested on different days
 the rafts get different numbers of pennies

7. A cup holder keeps a cup upright on a flat table but not on a bumpy bus ride, which was the real goal. What does this show?
 the flat-table test proves it works on a bus
 the design is finished
 the design does not yet meet the real goal
 the cup holder needs fewer tests

8. Two birdhouses with different hole sizes were put outside for a season. Use the graph. Which hole size worked better for bluebirds?



 both worked equally well neither hole was used Hole B (4 cm) Hole A (3 cm)

9. Design A meets 3 of 5 criteria and costs less. Design B meets all 5 criteria and costs more, but it is within the budget. Which should be chosen?
 both designs equally Design B neither design Design A

10. After a redesign, a paper bridge holds the same number of washers as before. What does this suggest?
 the change did not make the bridge stronger
 the change made the bridge weaker
 washers cannot test strength
 the change made the bridge much stronger

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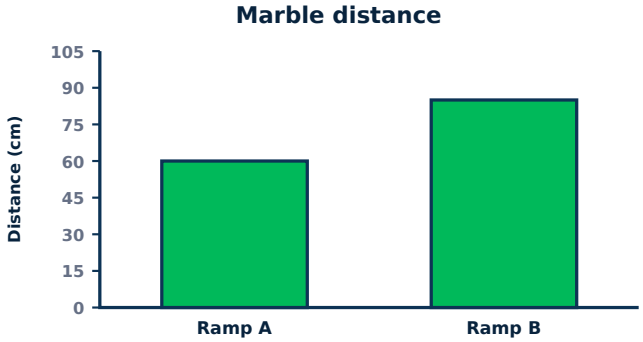
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Answer Key - Grade 3 Science Worksheet

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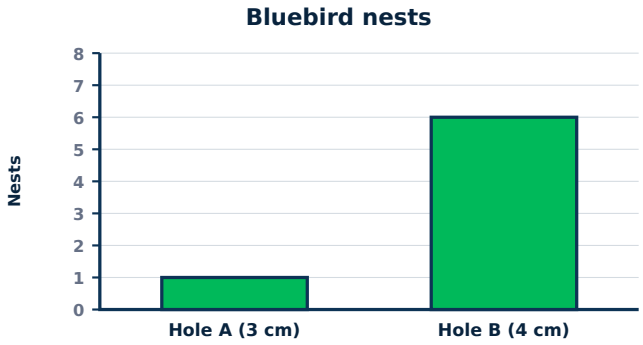
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