Compare Engineering Solutions

Grade 3 Science Worksheet

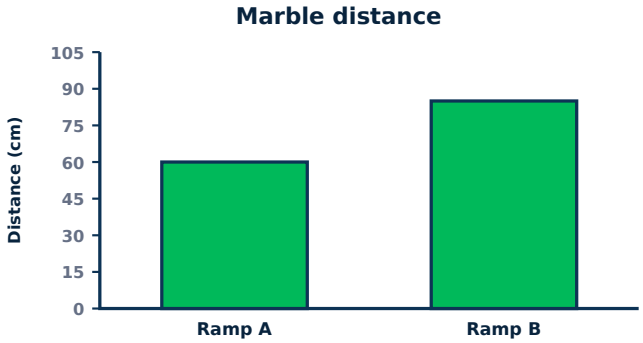
Name _____ Date _____

Circle the answer.

1. A tall tower tips over. A shorter tower stays standing. What tradeoff does this show?
   height versus stability height versus build time cost versus build time stability versus cost

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

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



   Ramp B Ramp A neither ramp both ramps

4. 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?
   neither should be used Design X both are equally good Design Y

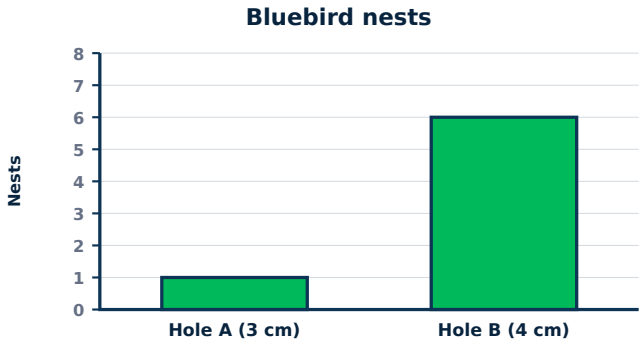
5. A bridge redesign replaces flat paper beams with folded beams and holds twice as many washers. What does this show?
   the bridge needs more washers
   folding the paper made the beams stronger
   washer count does not show strength
   the bridge became weaker

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

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

8. 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 cup holder needs fewer tests
 the design does not yet meet the real goal
 the design is finished

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



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

10. 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?
Design A neither design both designs equally Design B

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Answer Key - Grade 3 Science Worksheet

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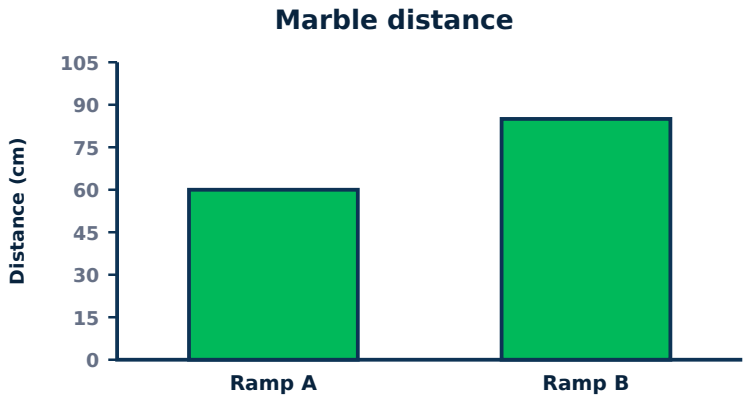
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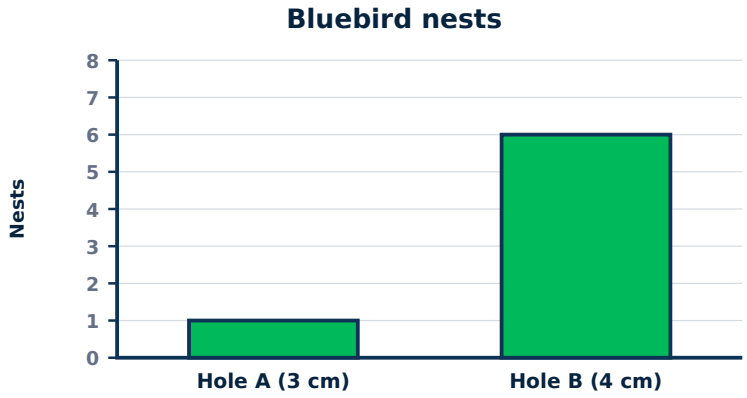
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