Define Engineering Problems

Grade 3 Science Worksheet

Name _____ Date _____

Circle the answer.

1. A ramp must send a marble at least 50 cm. In a test, the marble went 65 cm. Does the ramp meet the goal?
   yes, because the ramp is tall
   no, because it must be exactly 50 cm
   no, because 65 cm is too far
   yes, because 65 cm is farther than 50 cm

2. A paper airplane flies 2 meters, but the goal is 5 meters. What should the student do next?
   stop testing, since 2 meters is close
   redesign the plane and test it again
   change the goal to 2 meters
   throw it the same way ten more times

3. A parachute must make a toy fall slowly. Which test result shows the parachute works?
   the toy falls at the same speed either way
   the toy lands upside down
   the parachute is the biggest in the class
   the toy falls slower with the parachute than without it

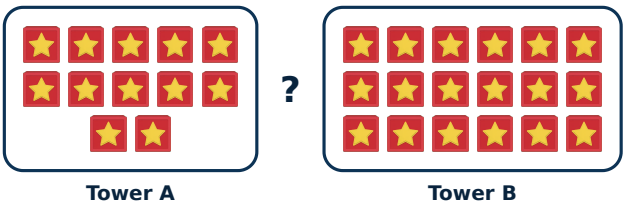
4. A rain gutter must carry water away from a doorway. Which observation shows it is not working?
   the gutter is made of metal
   water pools at the doorway during rain
   water flows away from the doorway
   the gutter is 10 feet long

5. A foil boat must hold 10 pennies and use only one sheet of foil. Which is the constraint?
   float for one minute hold 10 pennies stay dry inside use only one sheet of foil

6. Why should a class list the criteria before building a solution?
   criteria are added after building
   criteria are the materials allowed
   criteria show how to judge if the design works
   criteria replace testing

7. A cup holder must keep a cup upright on a bumpy bus. Which test best shows if the design meets this need?
   measure how tall the cup holder is
   weigh the holder with no cup
   tilt and shake the holder and see if the cup stays up
   count how many students like it

8. A block tower may use no more than 15 blocks. Tower A uses 12 blocks and Tower B uses 18. Which tower follows the limit?

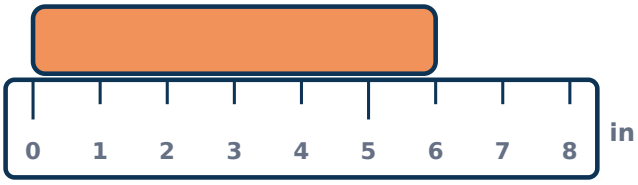


neither tower both towers Tower A Tower B

9. A lunchbox must keep food cold for 4 hours and fit a cubby 30 cm wide. Which describes the whole problem?

fit in a 30 cm cubby
keep food cold 4 hours and fit a 30 cm cubby
be the coldest lunchbox ever made
keep food cold for 4 hours

10. A pencil holder must be no wider than 6 inches. This one is 6 inches wide. Does it meet the size limit?



yes, because it holds many pencils
no, because it must be smaller than 6 inches
yes, because it is not wider than 6 inches
no, because it is exactly 6 inches wide

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Answer Key - Grade 3 Science Worksheet

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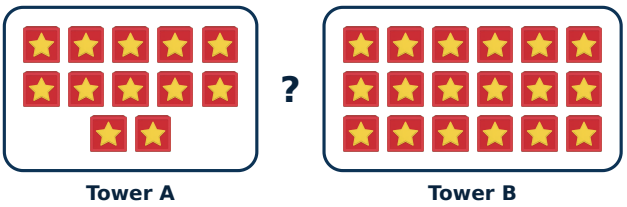
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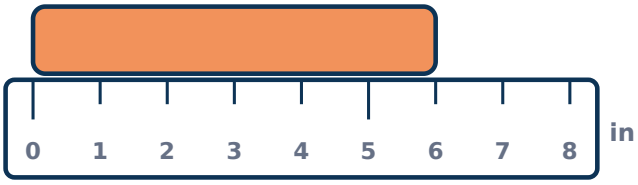


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