Define Engineering Problems

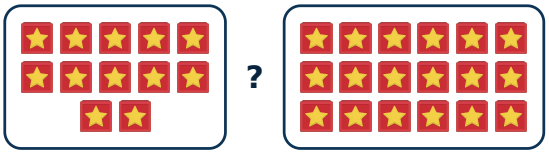
Grade 3 Science Worksheet

Name _____ Date _____

Circle the answer.

1. 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
   count how many students like it
   tilt and shake the holder and see if the cup stays up

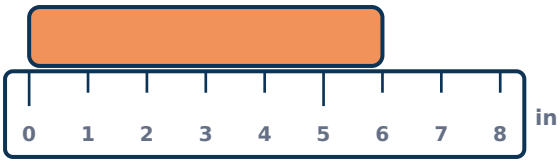
2. A block tower may use no more than 15 blocks. Tower A uses 12 blocks and Tower B uses 18. Which tower follows the limit?



   Tower A neither tower both towers Tower B

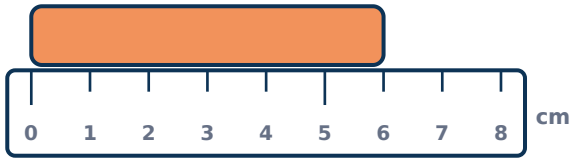
3. A lunchbox must keep food cold for 4 hours and fit a cubby 30 cm wide. Which describes the whole problem?
   keep food cold for 4 hours
   keep food cold 4 hours and fit a 30 cm cubby
   fit in a 30 cm cubby
   be the coldest lunchbox ever made

4. 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 is exactly 6 inches wide
   yes, because it is not wider than 6 inches
   no, because it must be smaller than 6 inches

5. A birdhouse hole must be no more than 4 cm across, so squirrels cannot get in. This hole is 6 cm across. Does it meet the rule?



yes, because 6 cm is close to 4 cm
yes, because bigger holes let more birds in
no, because the hole is too small
no, because 6 cm is larger than the 4 cm limit

6. A kite challenge allows one sheet of paper and one stick. A student's kite uses two sheets and three sticks, and it flies steadily. Does it meet the requirements?
yes, because it flies steadily
no, because it flies too low
no, because it uses more materials than allowed
yes, because extra sticks make it stronger

7. A rule says a ramp may rise no more than 1 inch for every 12 inches of length. A ramp rises 1 inch for every 6 inches. Does it meet the rule?
yes, because it still reaches the door
no, because it is steeper than the rule allows
no, because it is too flat
yes, because it rises only 1 inch at a time

8. 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 65 cm is too far
no, because it must be exactly 50 cm
yes, because 65 cm is farther than 50 cm

9. 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
change the goal to 2 meters
throw it the same way ten more times
redesign the plane and test it again

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

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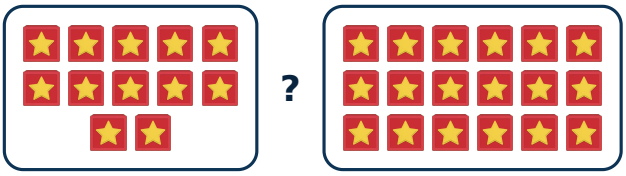
Answer Key - Grade 3 Science Worksheet

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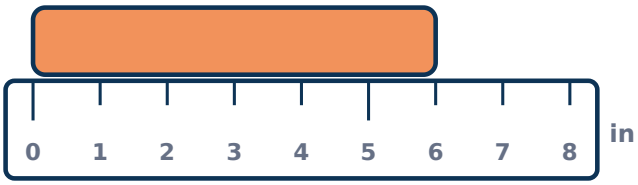


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