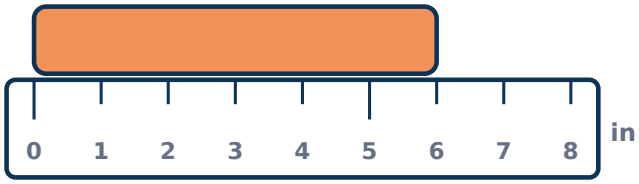
Define Engineering Problems

Grade 3 Science Worksheet

Name _____ Date _____

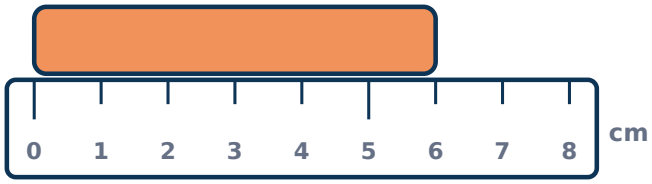
Circle the answer.

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



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

2. 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?



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

3. 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?

no, because it flies too low
no, because it uses more materials than allowed
yes, because it flies steadily
yes, because extra sticks make it stronger

4. 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
yes, because it rises only 1 inch at a time
no, because it is steeper than the rule allows
no, because it is too flat

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

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

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

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

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

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

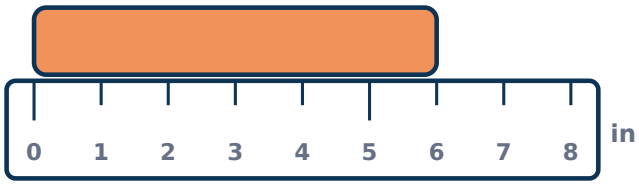
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Answer Key - Grade 3 Science Worksheet

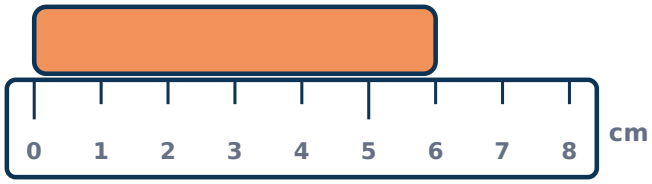
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