Define Engineering Problems

Grade 3 Science Worksheet - Building Confidence

Name _____ Date _____

Circle the answer.

1. A bridge must hold 20 washers and use only paper and tape. What is the criterion, the goal it must meet?

   use only paper and tape be built by Friday hold 20 washers

2. A bridge must hold 20 washers and use only paper and tape. What is the constraint, the limit?

   use only paper and tape stay flat when loaded hold 20 washers

3. Which sentence names an engineering problem?

   Our classroom has twenty desks.

   Students need a way to keep cups from tipping on desks.

   Cups come in many colors.

4. Students get too hot in the sun at recess. What problem should a design solve?

   making recess longer

   giving students more swings

   keeping students cool at recess

5. Which is a constraint for a classroom tower challenge?

   hold a small flag stand at least 30 cm tall use only 20 straws

6. Which is a criterion for a classroom tower challenge?

   stand at least 30 cm tall use only 20 straws be built in 15 minutes

7. A garden path floods after storms. Which need should the design address?

   move extra water away from the path

   make the path longer

   add more stones in the low spot

8. An umbrella stand must hold an umbrella upright without tipping. What need does it solve?

making an umbrella open faster

keeping an umbrella from falling over

keeping an umbrella dry inside

9. A greenhouse must keep plants warmer than the outside air in winter. What problem does it solve?

making plants grow without soil

protecting plants from the cold

keeping plants from needing water

10. A backpack strap keeps hurting a student's shoulder. Which need should a new strap design address?

spread the weight so it does not hurt

make the zipper bigger

fit more books inside

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Answer Key - Grade 3 Science Worksheet - Building Confidence

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