# Define Engineering Problems

Grade 3 Science Worksheet - Building Confidence

Name _____ Date _____

Circle the answer.

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

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

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

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

3. 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

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

   keeping an umbrella from falling over

   making an umbrella open faster

   keeping an umbrella dry inside

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

   protecting plants from the cold

   making plants grow without soil

   keeping plants from needing water

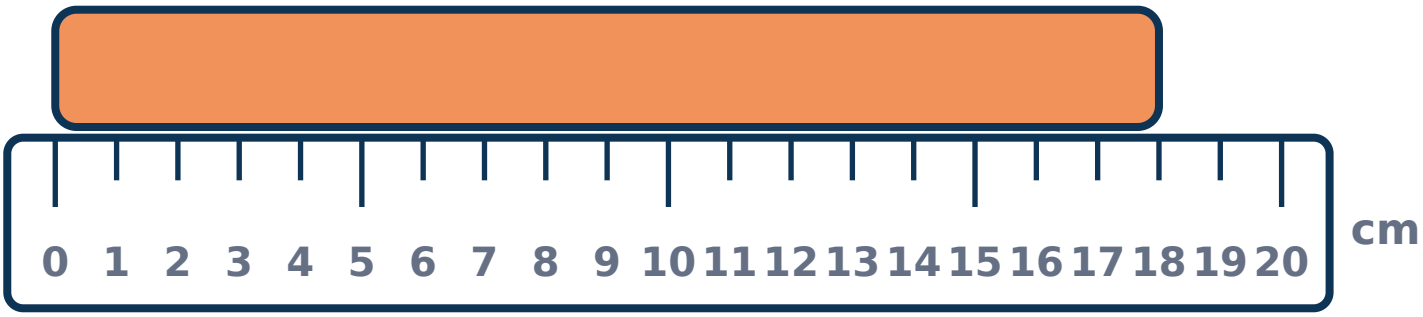
6. A backpack strap keeps hurting a student's shoulder. Which need should a new strap design address?

   spread the weight so it does not hurt

   make the zipper bigger

   fit more books inside

7. A tower must be at least 15 cm tall. This tower measures 18 cm. Does it meet the goal?




no, it must be exactly 15 cm

yes, it is taller than 15 cm

no, it is shorter than 15 cm

8. A doghouse must keep rain out and fit in a small yard. It fits in the yard, but rain drips through gaps in its roof. Does it solve the problem?

yes, because it has a roof

no, because rain still gets in

yes, because it fits in the yard

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

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

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

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

**Scan to get this marked free. No screen time for your child.**
Print it · do it in pencil · scan it · PencilGo picks the next sheet.

# Define Engineering Problems

Answer Key - Grade 3 Science Worksheet - Building Confidence

Circle the answer.

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

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

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

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

3. 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

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

   keeping an umbrella from falling over

   making an umbrella open faster

   keeping an umbrella dry inside

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

   protecting plants from the cold

   making plants grow without soil

   keeping plants from needing water

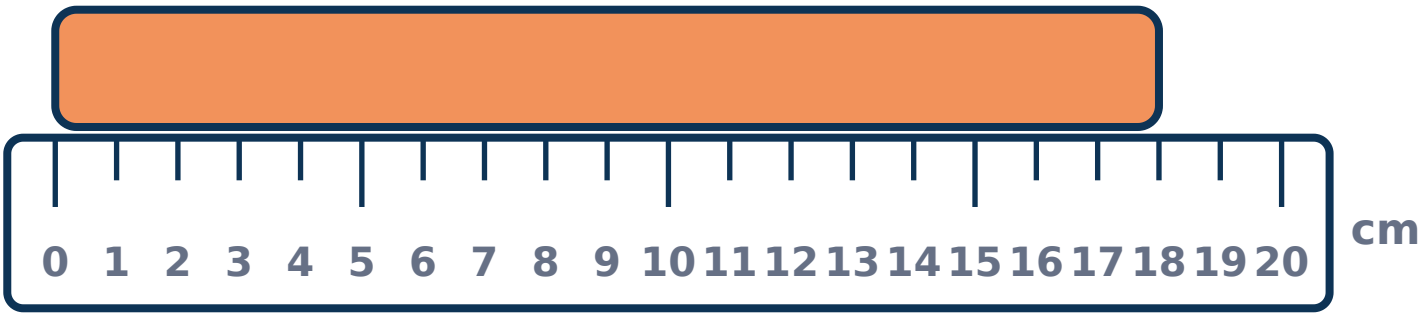
6. A backpack strap keeps hurting a student's shoulder. Which need should a new strap design address?

   spread the weight so it does not hurt

   make the zipper bigger

   fit more books inside

7. A tower must be at least 15 cm tall. This tower measures 18 cm. Does it meet the goal?




no, it must be exactly 15 cm

yes, it is taller than 15 cm

no, it is shorter than 15 cm

8. A doghouse must keep rain out and fit in a small yard. It fits in the yard, but rain drips through gaps in its roof. Does it solve the problem?

yes, because it has a roof

no, because rain still gets in

yes, because it fits in the yard

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

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

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

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