



# Engineering Design Challenges

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Grade: Grade 4

## Part A: Fill in the Blank

Write the missing word or number on each line.

1. In an \_\_\_\_\_ drop challenge, students protect a raw egg from breaking when dropped.
2. Cushioning materials like cotton or \_\_\_\_\_ help slow the egg before it lands.
3. A newspaper \_\_\_\_\_ is built only from rolled paper and tape to hold weight.
4. Rolling newspaper into tight \_\_\_\_\_ makes it much stronger than flat sheets.
5. A solar \_\_\_\_\_ uses sunlight to heat food without electricity or fire.
6. Solar ovens often use shiny \_\_\_\_\_ to reflect sunlight onto the food inside.
7. A \_\_\_\_\_ is something the engineer changes to test how it affects results.
8. Engineers measure outcomes using a \_\_\_\_\_ for length and a scale for weight.
9. A \_\_\_\_\_ is something that cannot change, like time limits or available materials.

## Part B: Matching

Match each item on the left to the correct answer on the right.

1. Match each item to its correct answer.

Egg drop	→ _____	Protect a falling egg
Newspaper bridge	→ _____	Hold weight across a gap
Solar oven	→ _____	Cook using sunlight
Variable	→ _____	A factor that changes

**Part A: Fill in the Blank**

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Write the missing word or number on each line.

1. In an egg drop challenge, students protect a raw egg from breaking when dropped.
2. Cushioning materials like cotton or bubble wrap help slow the egg before it lands.
3. A newspaper bridge is built only from rolled paper and tape to hold weight.
4. Rolling newspaper into tight tubes makes it much stronger than flat sheets.
5. A solar oven uses sunlight to heat food without electricity or fire.
6. Solar ovens often use shiny foil to reflect sunlight onto the food inside.
7. A variable is something the engineer changes to test how it affects results.
8. Engineers measure outcomes using a ruler for length and a scale for weight.
9. A constraint is something that cannot change, like time limits or available materials.

**Part B: Matching**

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Match each item on the left to the correct answer on the right.

1. Match each item to its correct answer.

Egg drop	→ <u>Protect a falling egg</u>	Protect a falling egg
Newspaper bridge	→ <u>Hold weight across a gap</u>	Hold weight across a gap
Solar oven	→ <u>Cook using sunlight</u>	Cook using sunlight
Variable	→ <u>A factor that changes</u>	A factor that changes