



Engineering Design Challenges

Name: _____

Date: _____

Grade: Grade 4

Part A: Fix the Sentence

Each sentence has an error. Rewrite it correctly on the line.

1. Fix the sentence: Imagine step means we picks just one idea fast.

Rewrite: _____

2. Fix the sentence: During Create, the engineer drewed a careful sketch only.

Rewrite: _____

3. Fix the sentence: The team weren't allowed to spend more than ten dollars.

Rewrite: _____

Part B: Fill in the Blank

Write the missing word or number on each line.

- Brainstorming many possible ideas happens during the _____ step.
- Building a real model from materials happens in the _____ step.
- After testing, fixing weak parts happens in the _____ step.
- A bridge that must hold 5 pounds shows a clear _____.

Part C: Short Answer

Answer each question in one or two complete sentences.

1. Why do engineers usually repeat the design process more than once?

2. Give one example of a criterion and one constraint for a paper bridge.

Part A: Fix the Sentence

Each sentence has an error. Rewrite it correctly on the line.

1. Fix the sentence: Imagine step means we picks just one idea fast.

Rewrite: Imagine step means we brainstorm many ideas first.

2. Fix the sentence: During Create, the engineer drewed a careful sketch only.

Rewrite: During Create, the engineer builds a careful prototype.

3. Fix the sentence: The team weren't allowed to spend more than ten dollars.

Rewrite: The team was not allowed to spend more than ten dollars.

Part B: Fill in the Blank

Write the missing word or number on each line.

1. Brainstorming many possible ideas happens during the Imagine step.
2. Building a real model from materials happens in the Create step.
3. After testing, fixing weak parts happens in the Improve step.
4. A bridge that must hold 5 pounds shows a clear criterion .

Part C: Short Answer

Answer each question in one or two complete sentences.

1. Why do engineers usually repeat the design process more than once?

Tests often reveal problems, so engineers improve and retest until the design meets all criteria within the constraints.

2. Give one example of a criterion and one constraint for a paper bridge.

A criterion could be holding three coins, while a constraint could be using only one sheet of paper.
