



# Engineering Design Process

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

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

Grade: Grade 3

## Part A: Fill in the Blank

Write the missing word or number on each line.

1. A Grade 3 class must build a bridge to hold 20 coins. Stating this goal is the \_\_\_\_\_ step.
2. Before building a tower, Grade 3 engineers list rules like height and materials called \_\_\_\_\_.
3. A limit such as using only 10 straws for a Grade 3 tower is called a \_\_\_\_\_.
4. Grade 3 students draw many rainproof cover ideas during the \_\_\_\_\_ step.
5. After choosing one rainproof cover idea, Grade 3 engineers make a \_\_\_\_\_ with materials listed.
6. Grade 3 students build a small bridge model called a \_\_\_\_\_ during the create step.
7. Loading coins on a Grade 3 bridge to see when it breaks is the \_\_\_\_\_ step.
8. After testing, Grade 3 engineers make changes, called \_\_\_\_\_, to make the design better.
9. Repeating the design steps over and over to make a better design is called \_\_\_\_\_.

## Part B: Matching

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

1. Match each item to its correct answer.

Grade 3 class lists: bridge must hold 20 coins, use paper only	→ _____	Ask step (criteria and constraints)
Grade 3 team sketches 6 different rainproof cover ideas	→ _____	Imagine step (brainstorming)
Grade 3 students build a straw tower model to try it	→ _____	Create step (build prototype)
Grade 3 team loads coins on bridge and records when it falls	→ _____	Test step (try and record)

## Answer Key · Engineering Design Process · Grade: Grade 3

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### Part A: Fill in the Blank

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Write the missing word or number on each line.

1. A Grade 3 class must build a bridge to hold 20 coins. Stating this goal is the ask step.
2. Before building a tower, Grade 3 engineers list rules like height and materials called criteria .
3. A limit such as using only 10 straws for a Grade 3 tower is called a constraint .
4. Grade 3 students draw many rainproof cover ideas during the imagine step.
5. After choosing one rainproof cover idea, Grade 3 engineers make a plan with materials listed.
6. Grade 3 students build a small bridge model called a prototype during the create step.
7. Loading coins on a Grade 3 bridge to see when it breaks is the test step.
8. After testing, Grade 3 engineers make changes, called improve , to make the design better.
9. Repeating the design steps over and over to make a better design is called iterate .

### 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.

Grade 3 class lists: bridge must hold 20 coins, use paper only	→ <u>Ask step (criteria and constraints)</u>	Ask step (criteria and constraints)
Grade 3 team sketches 6 different rainproof cover ideas	→ <u>Imagine step (brainstorming)</u>	Imagine step (brainstorming)
Grade 3 students build a straw tower model to try it	→ <u>Create step (build prototype)</u>	Create step (build prototype)
Grade 3 team loads coins on bridge and records when it falls	→ <u>Test step (try and record)</u>	Test step (try and record)