



Engineering Design Challenges

Name: _____

Date: _____

Grade: Grade 4

Part A: Fill in the Blank

Write the missing word or number on each line.

1. Picking the best idea from a brainstorm uses your _____.
2. An idea that costs less but breaks faster has a clear _____.
3. A bridge using cardboard is light, but it is not very _____.
4. Brainstorming works best when teams write down _____ ideas.
5. An airplane with heavy clay flies short but very _____.
6. A water filter with small holes cleans well but slows the _____.
7. A marble run with tight turns is exciting but loses _____.
8. Engineers choose the design that best meets goals and _____.
9. Two solutions compared on a chart help show every _____.

Part B: Matching

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

1. Match each item to its correct answer.

Cheaper materials	→ _____	Lower cost but weaker build
Wider airplane wings	→ _____	Steadier flight but slower speed
Smaller filter holes	→ _____	Cleaner water but slower flow
Tight marble track turns	→ _____	More excitement but lower speed

Part A: Fill in the Blank

Write the missing word or number on each line.

1. Picking the best idea from a brainstorm uses your criteria .
2. An idea that costs less but breaks faster has a clear trade-off .
3. A bridge using cardboard is light, but it is not very strong .
4. Brainstorming works best when teams write down many ideas.
5. An airplane with heavy clay flies short but very straight .
6. A water filter with small holes cleans well but slows the flow .
7. A marble run with tight turns is exciting but loses speed .
8. Engineers choose the design that best meets goals and limits .
9. Two solutions compared on a chart help show every trade-off .

Part B: Matching

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

1. Match each item to its correct answer.

Cheaper materials	→	<u>Lower cost but weaker build</u>	Lower cost but weaker build
Wider airplane wings	→	<u>Steadier flight but slower speed</u>	Steadier flight but slower speed
Smaller filter holes	→	<u>Cleaner water but slower flow</u>	Cleaner water but slower flow
Tight marble track turns	→	<u>More excitement but lower speed</u>	More excitement but lower speed