Name: Date: Score: / 8

Engineering Design: Learn and Practice

Plan, build, test and improve

Read each question. Circle the best answer.

💡 Engineering Design

- Engineers solve problems by designing something new.
- They define the problem, then plan, build, test and improve.
- Criteria are what the design must do, and constraints are limits like time or materials.
- a bridge that must hold 10 coins, using only paper: constraint: paper only

1 ⛵ You must build a boat using only foil and tape. Using only foil and tape is a...

A. Result B. Constraint C. Criterion
D. Prediction

2 A small model you build to test an idea is called a...

A. Habitat B. Predator C. Prototype
D. Forecast

3 Why do engineers test more than one design?

A. To make it slower B. To use up materials
C. To find which works best
D. Because it is fun only

4 ✏️ A drawing of your idea before you build it is a...

A. Pattern B. Conclusion C. Fossil
D. Plan or sketch

5 What is the first step in engineering design?

A. Test it B. Build the model
C. Define the problem D. Sell it

6 👷 What do engineers do?

A. Paint pictures B. Only grow food
C. Only study stars
D. Design solutions to problems

7 Your design does not work when you test it. What should you do?

A. Throw it away B. Give up forever C. Hide it
D. Improve it and test again

8 Your boat must hold 20 marbles without sinking. This is a...

A. Constraint B. Conclusion C. Criterion
D. Prediction

✏️ Explain it! Write two facts you learned about engineering design.

ANSWER KEY

Engineering Design: Learn and Practice (answers)

Plan, build, test and improve

Read each question. Circle the best answer.

1 ⛵ You must build a boat using only foil and tape. Using only foil and tape is a...

A. Result **B. Constraint** C. Criterion D. Prediction

A constraint is a limit. Here, the materials you are allowed to use are limited.

2 A small model you build to test an idea is called a...

A. Habitat B. Predator **C. Prototype** D. Forecast

A prototype is a first model. It lets you test your idea before making the final version.

3 Why do engineers test more than one design?

A. To make it slower B. To use up materials **C. To find which works best** D. Because it is fun only

Comparing designs shows which one meets the criteria best.

4 ✏️ A drawing of your idea before you build it is a...

A. Pattern B. Conclusion C. Fossil **D. Plan or sketch**

A sketch helps you plan your design and share your idea with others.

5 What is the first step in engineering design?

A. Test it B. Build the model **C. Define the problem** D. Sell it

You need to know exactly what problem you are solving before you start building.

6 👷 What do engineers do?

A. Paint pictures B. Only grow food C. Only study stars **D. Design solutions to problems**

Engineers use science and creativity to design things that solve problems.

7 Your design does not work when you test it. What should you do?

A. Throw it away B. Give up forever C. Hide it **D. Improve it and test again**

Engineers learn from every test. Fix the problem and try again!

8 Your boat must hold 20 marbles without sinking. This is a...

A. Constraint B. Conclusion **C. Criterion** D. Prediction

A criterion is what the design must do to succeed. Holding 20 marbles is the goal.