

Sum It Up >>

In the blanks, write the word that makes the sentence correct.

engineering

technology

1. The things that engineers design to meet human needs are _____
2. _____ is the process of designing and testing new technologies.
3. Toothbrushes, washing machines, and computers are examples of _____
4. _____ uses math and science to test devices and designs.

Fill in the missing words to explain how engineers conduct the design process. Use the words in the box if you need help.

communicating
needs

engineering
problem

keep good records
prototype

5. _____ is the use of science and math to solve everyday problems. Engineers invent and improve things that meet human
6. _____.
- The design process that engineers follow includes finding a
7. _____, building and testing a
8. _____, and
9. _____ results. During each step of the design process, engineers
10. _____.





Name _____

Vocabulary Review

1 Beside each sentence, write *T* if the sentence is mostly about using technology. Write *E* if the sentence is mostly about the engineering design process.

- ___ 1. Sarah sent a text message to Sam on her cell phone.
- ___ 2. The nurse used a digital thermometer to measure the patient's temperature.
- ___ 3. Henry tested three brands of blender. He wanted to see which one made the creamiest smoothies.
- ___ 4. Workers at the factory use machines to bottle spring water.
- ___ 5. Jessica invented a better mousetrap. She patented her invention.
- ___ 6. Eli used math to figure out how much weight a bridge could hold.
- ___ 7. The nurse is using a new x-ray machine.
- ___ 8. Mayling is designing a refrigerator that uses less electricity.
- ___ 9. Guillermo's new snowblower makes snow removal faster and easier.
- ___ 10. Laptop computers are designed to be smaller, lighter, and easier to carry.



Apply Concepts

- 2** Match the picture of the technology to the need it fulfills. Draw a line from the picture to the matching need.



go to school

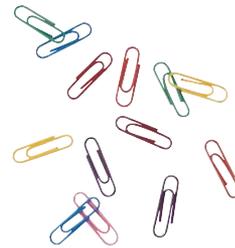


get up on time



see clearly

make a cake



fix a broken bone



keep papers together



- 3** Write the missing words in the sentences below. Use the word box if you need help.

brainstormed good records problem prototype

Jeremy had a _____ that he wanted to solve—his go-cart was too slow. Jeremy and his friend Todd _____ ideas to make it faster. Together, they designed a _____ and tested it. They kept _____ that showed that the go-cart really was faster.

4 Circle the words or phrases that are criteria for designing skates that will be safe. Cross out those that are *not* criteria for safety.

roll smoothly

brake easily

come in different styles

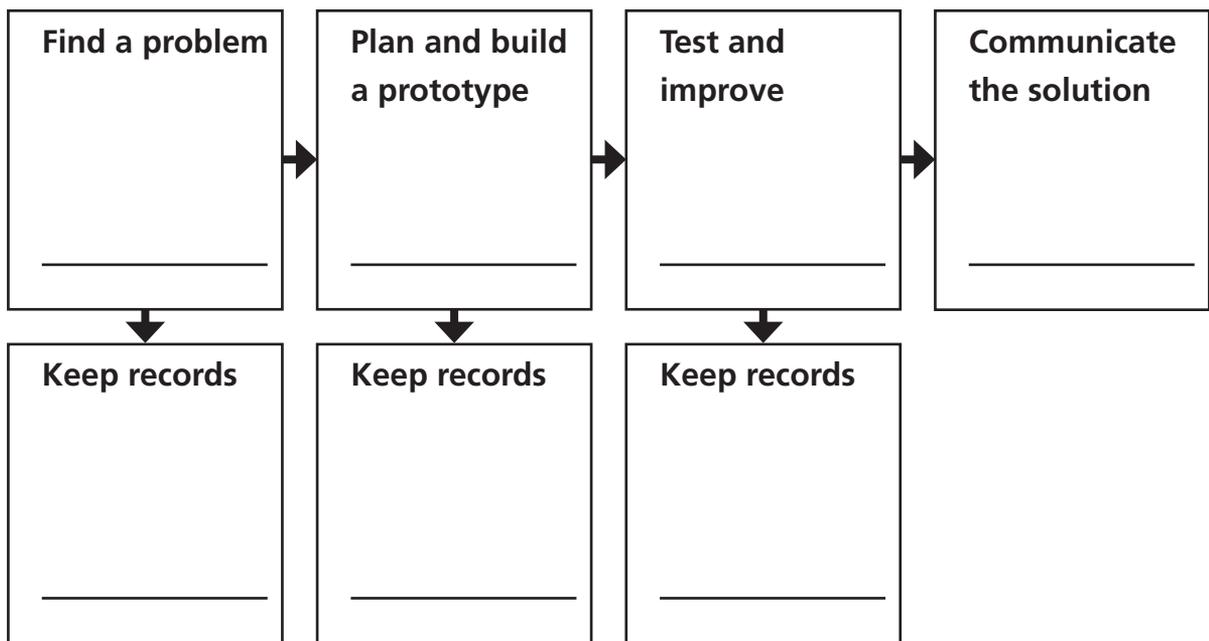
fit snugly

come in different colors

sturdy

5 Look at the flow chart showing the steps of the design process. Then read the list of steps for designing a thermos. These steps are not in order. Write the letter of each step in the appropriate box of the flow chart.

The Design Process



Steps for Designing a Thermos

A Keep data tables.

E Measure the temperature inside the container.

B Write a report

F Keep hot things hot and cold things cold.

C Write down ideas.

G Use insulating materials to make a container.

D Make drawings.

6 Sylvia is an engineer. Her friend Martin is an artist who paints with oil paints. Martin tells Sylvia that cleaning oil paint out of brushes takes a lot of time. It's messy, too. Write three or more sentences explaining what Sylvia would do to engineer a solution to Martin's problem.



7 Michaela's grandparents used to have a record player. When they were her age, they listened to songs recorded on vinyl records. Michaela's parents listened to cassette tapes when they were young. Later, they got a CD player. Now, Michaela's family members upload music onto MP3 players.

Explain how these changes are examples of engineering and technology.



Take It Home!

See *ScienceSaurus*[®] for more information about science and engineering.