

What Is the Design Process?

Science Words

Say each word quietly to yourself. Then read the meaning.

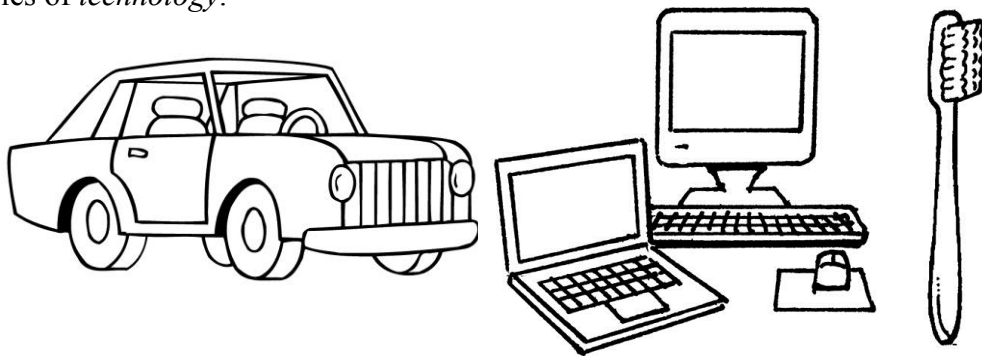
Read the tip to help you remember.

engineering [en•juh•NEER•ing] using knowledge of science and mathematics to find solutions to everyday problems

Engineering and *mathematics* have four syllables, or parts. *Engineering* makes use of science and mathematics.

technology [tek•NAHL•uh•jee] any device that people use to meet their needs and solve practical problems

Technology, *tools*, and *television* begin with the same sound. Tools and televisions are examples of *technology*.



The car, the computers, and the toothbrush are examples of technology.

prototype [PRO•tuh•typ] a working model

Prototype and *product* begin with the same sounds. Making a *prototype* is an important step in developing a new product.

criteria [kry•TEER•ee•uh] standards that help engineers measure how well their design is doing its job

Criteria and *conditions* begin with the same sound. *Criteria* are the conditions a design needs to meet.

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Science Concepts

Read the Ideas more than once. Do your best to remember them.

1. Engineers find solutions to everyday problems in many fields.
2. Technology affects our lives: Machines make work easier; medicine helps restore health; satellites help us predict weather and communicate.
3. To develop new technologies, engineers follow a design process that involves several steps.
4. First, engineers find a need or a problem to solve and brainstorm possible solutions.
5. Next, they choose a solution and build a prototype, keeping records of everything they do.
6. Then they test their model to see if it stands up to their criteria, gathering data from the test.
7. If needed, engineers adjust their design and make a new prototype to test.
8. Lastly, engineers communicate their results in written reports.
9. It may take many years to reach the final product for a new technology.
10. Finding materials that work well for the product affects the design process.