

Name _____

EFFICIENCY & EFFECTIVENESS

Directions: Read the information below.

Efficiency means doing something in the best way possible, with the least effort, to achieve your desired outcome. It may make more sense if you think about it in examples. If you want to tell your friends some news, it's most efficient to walk up to them and tell them. It's inefficient, or not efficient, to tell your other friend to tell their friend to tell them the news; it takes much more effort. What about when you are getting ready for school? You eat, shower, and get dressed every morning. When you get dressed, you probably pick out all your clothes, then put them on at once. That's efficient. What is inefficient is selecting a shirt, looking at the mirror to see if it looks good, then selecting pants, looking back at the mirror, searching for a left sock, going to the mirror, finding a matching right sock, back to the mirror, and finally choosing a hat. It takes less effort to grab a shirt, pants, socks, and hat, put them all on, then go to the mirror once.

Efficiency is different from effectiveness; effectiveness means you are accomplishing the task you set out to accomplish. Pretend that you decide to plan a movie night, so instead of texting all your friends individually, you just create a group message. That's efficient. But if you instead ask them to go shopping, that's ineffective. You have not accomplished your goal of asking them to see a movie. Another example could involve food. If you pack a salad for lunch, it may be efficient to combine all the ingredients in a container and have them ready to go. It makes sense because then you won't have to spend time mixing the ingredients, pouring the dressing, etc., during your lunch time. If, however, you find that pouring your dressing on the salad in the morning before you leave for school makes the lettuce soggy by lunch, then your method was not effective.

Finding the right balance between efficiency and effectiveness can be tricky. Engineers constantly aim to find the most efficient ways of accomplishing tasks. In the real world, doing something efficiently often saves money. However, remember that an idea is useless, no matter how efficient, if it is not effective at doing the task you wanted to achieve!

Directions: Answer the questions below.

1. After learning about Rube Goldberg machines, do you believe they are efficient? Why or why not?
2. Are they effective? Why or why not?
3. When you did the online machine, what did you find challenging?
4. How did you overcome that challenge?
5. What was easy to complete?
6. Did your machine take longer than you expected to complete? Why or why not?