

Question 1. *Why it is easier to open the lid of a container with a spoon than with a coin?
With mathematical expression*

Solution. Because we have Law of the lever: $MA = F_B/F_A = a/b$. It shows that if the distance a from the fulcrum to where the input force is applied (point A) is greater than the distance b from fulcrum to where the output force is applied (point B), then the lever amplifies the input force. On the other hand, if the distance a from the fulcrum to the input force is less than the distance b from the fulcrum to the output force, then the lever reduces the input force. \square