

May 4th

A common multiple is

$$1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8 \times 9 \times 10 = 3,628,800$$

However, we can find a smaller number which has all numbers 1-10 as factors more efficiently:

Ignore the 1 (it has no effect)

We need the 2 (it's prime)

We need the 3 (it's prime)

Instead of 4, we can use another 2 (as there is already 2, and $2 \times 2 = 4$)

We need the 5 (it's prime)

We don't need the 6 (as we already have 2×3 as part of the product)

We need the 7 (it's prime)

Instead of 8, we can use another 2 (as there is already 2×2 , and $2 \times 2 \times 2 = 8$)

Instead of 9, we can use another 3 (as there is already 3, and $3 \times 3 = 9$)

We don't need the 10 (as we already have 2×5 as part of the product)

Hence the LCM is

$$**2 \times 3 \times 2 \times 5 \times 7 \times 2 \times 3 = 2520**$$