

Common Factors and Multiples

Students apply their knowledge of greatest common factor and least common multiple to interpret and solve word problems.

CCSS content goal(s): 6.NS.B.4

Student Friendly Objective

I can identify patterns in the relationships between the least common multiple and the greatest common factor.

Student Responses

1. Do the situations below require greatest common factor or least common multiple?

- a. Earl is buying plates and forks for a cookout. Plates come in packages of 8. Forks come in packages of 10. He wants the fewest packages possible and the same number of plates and forks. How many plates and forks should he buy?

Least common multiple. We are finding the first time the multiples of 8 and the multiples of 10 overlap.

- b. A radio station is having a contest. Every 6th caller receives a free concert ticket. Every 20th caller receives a free tablet. What number caller will be the first to win both prizes?

Least common multiple. We are finding the first time the multiples of 6 and the multiples of 20 overlap.

- c. Sean has 15 oranges and 9 apples. He wants to put the fruit into baskets. Each basket should have the same combination of fruit. What is the largest number of baskets he can make?

Greatest common factor. We are looking for the greatest number of groups that can be formed with the same combination of oranges and apples in each group with no remaining fruit.

- d. The desks in a classroom are labeled 1 through 30. A teacher puts a green sticker on every 6 desks (starting at desk 6). A blue sticker is placed on every 8 desks (starting at desk 8). What number desk will be the first desk to get both stickers?

Least common multiple. We are finding the first time the multiples of 6 and the multiples of 8 overlap.

- e. Josh is filling bags to sell at a bake sale. He has 20 sugar cookies and 35 chocolate chip cookies. He wants to make bags with the same combination of cookies in each bag. What is the largest number of bags he can make?

Greatest common factor. We are looking for the greatest number of groups that can be formed with the same combination of chocolate chip and sugar cookies in each group with no remaining cookies.

Bonus: What do all the greatest common factor problems have in common? What do all the least common multiple problems have in common?

Situations that involve splitting items into as many groups as possible with the same combination of items in each group and no remaining items require us to use the greatest common factor. Situations that involve the first time repeating events overlap require us to use the least common multiple.