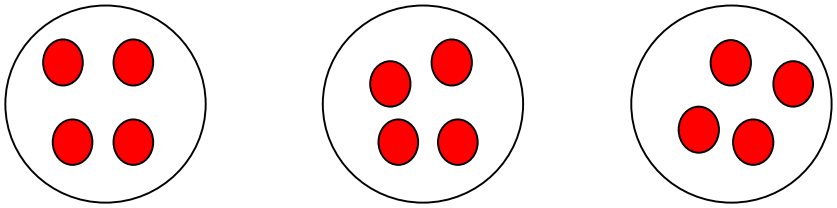
Fourth Grade: Mathematics
Unit 2: Math Strategies

Math Strategies for Multiplication

Draw a Picture or Use of Tools

The picture below shows 3 x 4 modeled as 3 groups of 4 objects.

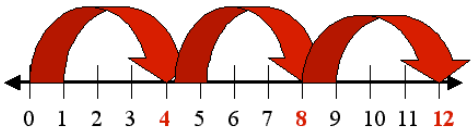


Use of Arrays

The picture below shows an array model for 3 x 4.
3 x 4 = 3 rows of 4

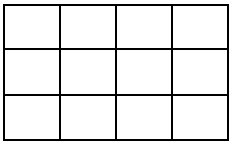
Number Line

The example below shows the number line model for 3 x 4. Multiplication can be thought of as "jumps" on a number line. The first factor of the multiplication corresponds to the number of jumps. The second factor corresponds to the length of each jump.
3 x 4 = 3 jumps of 4 units



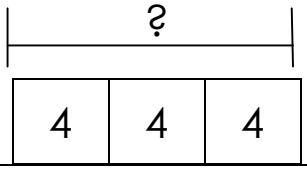
Area Model

The example below shows area model for 3 x 4.



Bar Diagram (Sometimes referred as Tape Diagram)

The example below shows the bar diagram for 3 x 4.



Repeated Addition

The example below shows repeated addition for 3 x 4.

4 + 4 + 4 = 12

Multiplication Equation

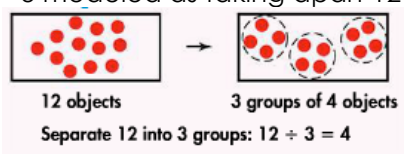
The example below shows the multiplication equation for 3 x 4.

3 x 4 = 12

Math Strategies for Division

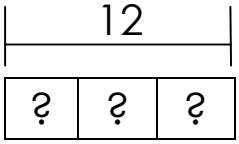
Draw a Picture or Use of Tools

The picture below shows 12 ÷ 3 modeled as taking apart 12 objects into 3 equal groups.



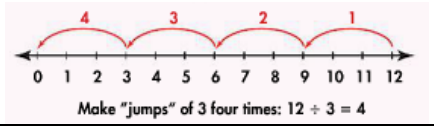
Bar Diagram (Sometimes referred as Tape Diagram)

The example below shows the bar diagram for 12 ÷ 3.



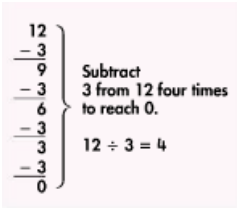
Number Line

The example below shows the number line model for 12 ÷ 3.



Repeated Subtraction

In the repeated subtraction interpretation, you are given a total amount and the amount in each group. The goal is to find the number of groups. The example below shows repeated addition for 12 ÷ 3.

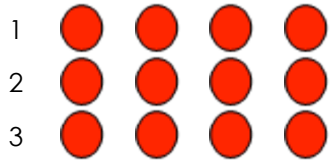


Think Multiplication

The example below shows how students can think multiplication for 12 ÷ 3. They can create a missing factor problem to think multiplication.

Ask, "3 times what number gives me 12?"
3 x ☐ = 12
"I know that 3 x 4 is 12, so 12 ÷ 3 is 4.

They can also use arrays to think multiplication for 12 ÷ 3. "I know there are three rows. I have to figure out how many are in each row. I will take 12 counters and put them in 3 equal rows."



Division Equation

The example below shows the division equation for 12 ÷ 3.

12 ÷ 3 = 4