Helping Your Child with Word Problems

Multiplication and Division

If your child is struggling with word problems, one strategy that can help is something called schema-based instruction. Schema-based instruction teaches your child how to recognize the type of word problem (*schema*) so they can figure out the best strategies to solve it.

Multiplicative Schemas

Schemas for multiplication and division are called *multiplicative schemas*. Two types of multiplicative schemas are *comparison problems* and *equal groups problems*.

Comparison Problems

A comparison problem is when a set is multiplied a number of times for a product (total).
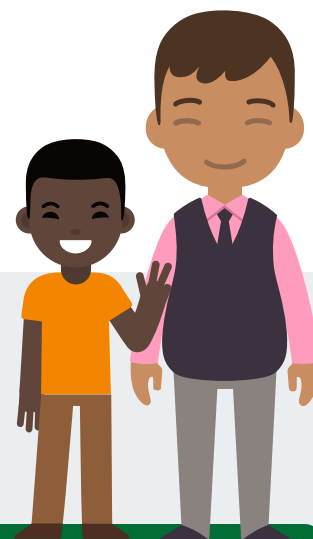
Equal Groups Problems

Equal groups problems are when a group or unit is multiplied by a specific number for a product.

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Comparison Problems

A comparison problem is when a set is multiplied a number of times for a product (total). For example, a problem that is written "Luis baked 32 brownies. Luis baked 4 times as many brownies as Micah" would be a comparison problem.
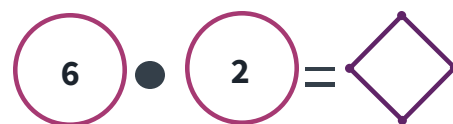
Set • Times = Product

In the examples below you can see what a comparison problem might look like. In each example, your child would be asked to compare two or more numbers – Mai has 6 pieces of candy, and Kyla has 2 times as much candy.

Product Unknown

Mai has 6 pieces of candy (*set*). Kyla has 2 times (*number of times*) as many pieces of candy. How many pieces of candy does Kyla have (*product – unknown*)?

Schema

$6 \bullet 2 = \diamond$

Number of Times Unknown

Pedro has 7 video games (*set*). Bronwynn has 21 video games (*product*). How many times as many video games does Bronwynn have than Pedro (*number of times – unknown*)?

Schema

$7 \bullet \bigcirc = 21$

Equal Groups Problems

Equal groups problems are when a group or unit is multiplied by a specific number for a product. Your child might be asked to solve for the unknown product (*total*) or unknown group.

Groups • **Number in each group** **=** **Product**

The examples below show what equal groups problems might look like. In the first example, we have information about the groups (*6 bags of oranges*) and the number in each group (*4 oranges in each bag*), but we don't know the total. This is an equal groups problem because each bag of oranges has an **equal** number of oranges inside.

In the second example, we know the total (20), and we know that Matthew wants to put an equal number of comic books on each of his 5 shelves.

Product (Total) Unknown

Tara has 6 bags of oranges (*groups*). There are 4 oranges in each bag (*number in each group*). How many oranges does Tara have (*product – unknown*)?

Schema

6 • 4 = ☐

Groups/Number Unknown

Matthew has 20 comic books (*product*). His bookshelf has 5 shelves (*groups*). He wants to put an equal number of comic books on each shelf. How many comic books will he put on each shelf (*number in each group*)?

Schema

5 • ☐ = 20