"Scenarios" are word problem contexts or settings that allow children to recognize what operation they should perform on the numbers SEEN in the problem.

Addition:

1. <u>Combine Scenario</u> - 2 collections of objects are gathered together

    Jeff has 8 apples and Carrie has 6. How many do they have together?

Subtraction:

1. <u>Take-Away Scenario</u> - objects are removed from a group

    Jeff had 5 apples and gave Carrie 2. How many does he have left?

2. <u>Missing Addend Scenario</u> - additional objects are needed to reach a desired target or goal

    Carrie has 2 apples and needs 5 for a recipe. How many more does she need?

3. <u>Comparison Scenario</u> - one group is matched against another

    Carrie has 5 apples and Jeff has 2. How many more does she have than he does?

Multiplication:

1. <u>Repeated Addition Scenario</u> - groups of identical size are combined

    Shawn has 4 bags of 6 marbles. How many marbles does he have altogether?

2. <u>Array/Area Scenario</u> - a grid or rectangle is created

    Belinda's classroom has 6 rows of 4 desks. How many desks are there altogether?

3. <u>Cartesian Product Scenario</u> - different types of items are "mixed and matched"

    Belinda has 6 blouses and 4 skirts that go together. How many different outfits can she make?

Division:

1. <u>Repeated Subtraction Scenario</u> - objects are separated into groups of **<u>known size</u>** (and we ask how many groups were made)

    Shawn has 12 cookies to put into bags of 3. How many bags can he make?

2. <u>Partitioning Scenario</u> - objects are separated into a **<u>known number of groups</u>** (and we ask how big each group was/what the group's size was)

    Shawn has 12 cookies to give to 3 friends. How many will each friend get?

3. Note that either scenario/model is also appropriate for division *with remainder*.

Be very clear on <u>what's asked for</u> in each scenario. That's a further help in distinguishing them.

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<u>SCENARIOS</u> only describe the **context or setting** in which you will choose to add, subtract, multiply, or divide the numbers involved. A very closely related concept is how you could **<u>MODEL</u>** the process, meaning how you'd actually **<u>demonstrate</u>** the interaction of your numbers. We often model by maneuvering actual **objects** (often literally acting out the scenario) or by drawing number lines (especially for **<u>measurement</u>** contexts - units of time, length, distance, weight, temperature, etc.). Most textbooks blur the distinction between an intellectual scenario and a visual/tactile model, and use the names listed above to describe both. They may also use more generic names across all four operations: "set models" use genuine physical objects, "number line models" draw arrows on a labeled number line.