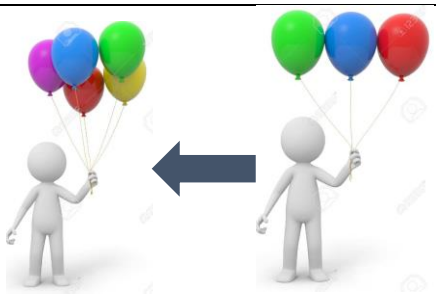
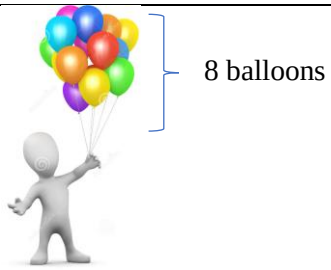
JOIN (Action)

START	CHANGE	RESULT
Jimmy has 5 balloons.	Sally gives Jimmy 3 more balloons.	Jimmy has 8 balloons.
		
There is an amount you "begin" with.	That amount is *increased* because you ADD something to it.	There is a final amount that you "end" with.

Remember!

- Join problems involve an action that increases a "starting" quantity by adding something to it. The result will be greater than the start.
- The change occurs over time.

SEPARATE (Action)

START	CHANGE	RESULT
Jimmy has 5 balloons.	Jimmy pops 2 of his balloons.	Jimmy has 3 balloons.
There is an amount you "begin" with.	That amount is *decreased* because you REMOVE something from it.	There is a final amount that you "end" with.

Remember!

- Separate problems involve an action that decreases a "starting" quantity by removing something from it. The result will be lesser than the start.
- The change occurs over time.

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PART-PART-WHOLE (Relationship)

PART	PART	WHOLE
Jimmy has 2 red balloons.	Jimmy also has 3 yellow balloons.	Jimmy has 5 total balloons.
There is an amount that is a part (or a "subset") of the whole.	There is another amount that is a part (or a "subset") of the whole.	There is an amount that is the complete "set" or "collection".

Remember!

- Part-Part-Whole problems **do not** use action words.
- Instead, there is a relationship between the whole and its parts.
- There are two types of PPW problems:
  - Both parts are given, and we need to find the size of the whole.
  - We are given the size of one part and the size of the whole, and need to find a missing part.

COMPARE (Relationship)

GREATER	DIFFERENCE		LESSER
Jimmy has 5 balloons.	Jimmy has 2 more balloons than Sally does.		Sally has 3 balloons.
	Jimmy	Sally	
There is a set. This set is greater or "bigger" than the other set.	This amount describes how the 2 sets compare to each other. This amount says *how much greater* the greater set is than the lesser set.		There is a **separate** set. This set is lesser or "smaller" than the other set.

Remember!

- Compare problems involve a comparison of two different sets.
- Compare problems **do not** involve action.
- There are three types of compare problems, depending on which quantity is *unknown*:
  - The difference (the quantity by which the larger set exceeds the smaller set)
  - The quantity in the greater set
  - The quantity in the lesser set

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EQUAL GROUPS (Relationship)

GROUP	SIZE	TOTAL
Jimmy buys 2 packs of balloons.	Each pack contains 5 balloons.	Jimmy has 10 total balloons.
This is the number of equal sized groups.	This is the amount in each group.	This is the number or amount in ALL groups.

Remember!

- One factor tells the amount in each group and the other factor tells the number of equal-size groups.
- The product tells the total amount in ALL groups.
- Equal groups story problems include:
  - When the number of groups and the amount in each group are known in an equal groups situation, the unknown value is the total.
  - When the total is known in an equal groups situation, the unknown value is the number of groups or the amount in each group.

MULTIPLICATIVE COMPARE (Relationship)

GREATER	TIMES	LESSER
Jimmy has 8 balloons.	Jimmy has 4 times as many balloons as Sally.	Sally has 2 balloons.
	Sally's Balloons x 4 = 8 (Jimmy's Balloons)	
There is a set. This set is greater or "bigger" than the other set.	This amount describes how the 2 sets compare to each other. This amount says *how many times greater* the greater set is than the lesser set.	There is a **separate** set. This set is lesser or "smaller" than the other set.

Remember!

- Multiplicative comparison problems are when we are given the quantities in a set, or a comparison factor.
- Either the amount in a set, or the comparison factor will be missing.
- Depending on the missing piece, either multiplication or division will be used to solve.

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