Common Addition and Subtraction Situations

	Result Unknown	Change Unknown	Start Unknown
Add to	Ruby took two dogs to the park. Three more dogs showed up at the park. How many dogs are there in all?	Bethany was working with two students in her classroom. Some more students came into her classroom. Then there were five students. How many students came to join the first two?	Some teachers were working with Ruby on math. Three more teachers joined them. Then there were five teachers. How many teachers were with her before?
Take from	Five teachers were at the table. Two teachers left. How many teachers are at the table now?	Five students were playing football at the park. Some students went home. Then there were three students. How many students left?	Ruby was teaching some students fractions. Two students had to go home. Then there were three students left. How many students were working with Ruby before?
	Total Unknown	**Addend Unknown**	**Both addends Unknown**
Put Together/ Take Apart	Three 5th grade classes and two 4th grade classes are going on the field trip. How many classes went on the field trip?	Five students passed Ruby's assessment. Three were girls and the rest were boys. How many students were boys?	Bethany has five counters. How many can she put in her red bag and how many in her blue bag?
	Difference Unknown	**Bigger Unknown**	**Smaller Unknown**
Compare	Bethany has two children. Ruby has five children. How many more children does Ruby have than Bethany?	Ruby scored three more points than Bethany. Bethany has two points. How many points does Ruby have?	Bethany has three more classes to teach than Ruby. Ruby has five classes. How many classes does Bethany have?

sign (=, here with the meaning of "becomes," rather than the more general "equals").

Table 2: Addition and subtraction situations by grade level.

	Result Unknown	Change Unknown	Start Unknown
Add To	A bunnies sat on the grass. B more bunnies hopped there. How many bunnies are on the grass now? $A + B = \square$	A bunnies were sitting on the grass. Some more bunnies hopped there. Then there were C bunnies. How many bunnies hopped over to the first A bunnies? $A + \square = C$	Some bunnies were sitting on the grass. B more bunnies hopped there. Then there were C bunnies. How many bunnies were on the grass before? $\square + B = C$
Take From	C apples were on the table. I ate B apples. How many apples are on the table now? $C - B = \square$	C apples were on the table. I ate some apples. Then there were A apples. How many apples did I eat? $C - \square = A$	Some apples were on the table. I ate B apples. Then there were A apples. How many apples were on the table before? $\square - B = A$
	Total Unknown	**Both Addends Unknown[1]**	**Addend Unknown[2]**
Put Together /Take Apart	A red apples and B green apples are on the table. How many apples are on the table? $A + B = \square$	Grandma has C flowers. How many can she put in her red vase and how many in her blue vase? $C = \square + \square$	C apples are on the table. A are red and the rest are green. How many apples are green? $A + \square = C$ $C - A = \square$
	Difference Unknown	**Bigger Unknown**	**Smaller Unknown**
Compare	*"How many more?" version.* Lucy has A apples. Julie has C apples. How many more apples does Julie have than Lucy? *"How many fewer?" version.* Lucy has A apples. Julie has C apples. How many fewer apples does Lucy have than Julie? $A + \square = C$ $C - A = \square$	*"More" version suggests operation.* Julie has B more apples than Lucy. Lucy has A apples. How many apples does Julie have? *"Fewer" version suggests wrong operation.* Lucy has B fewer apples than Julie. Lucy has A apples. How many apples does Julie have? $A + B = \square$	*"Fewer" version suggests operation.* Lucy has B fewer apples than Julie. Julie has C apples. How many apples does Lucy have? *"More" version suggests wrong operation.* Julie has B more apples than Lucy. Julie has C apples. How many apples does Lucy have? $C - B = \square$ $\square + B = C$

Darker shading indicates the four Kindergarten problem subtypes. Grade 1 and 2 students work with all subtypes and variants. Unshaded (white) problems are the four difficult subtypes or variants that students should work with in Grade 1 but need not master until Grade 2. Adapted from CCSS, p. 88, which is based on *Mathematics Learning in Early Childhood: Paths Toward Excellence and Equity*, National Research Council, 2009, pp. 32–33.

[1] This can be used to show all decompositions of a given number, especially important for numbers within 10. Equations with totals on the left help children understand that = does not always mean "makes" or "results in" but always means "is the same number as." Such problems are not a problem subtype with one unknown, as is the Addend Unknown subtype to the right. These problems are a productive variation with two unknowns that give experience with finding all of the decompositions of a number and reflecting on the patterns involved.

[2] Either addend can be unknown; both variations should be included.