Table 1. Common addition and subtraction situations.[6]

		Result Unknown	Change Unknown	Start Unknown
Join	Add to	Two bunnies sat on the grass. Three more bunnies hopped there. How many bunnies are on the grass now? $2 + 3 = ?$	Two bunnies were sitting on the grass. Some more bunnies hopped there. Then there were five bunnies. How many bunnies hopped over to the first two? $2 + ? = 5$	Some bunnies were sitting on the grass. Three more bunnies hopped there. Then there were five bunnies. How many bunnies were on the grass before? $? + 3 = 5$
Separate	Take from	Five apples were on the table. I ate two apples. How many apples are on the table now? $5 - 2 = ?$	Five apples were on the table. I ate some apples. Then there were three apples. How many apples did I eat? $5 - ? = 3$	Some apples were on the table. I ate two apples. Then there were three apples. How many apples were on the table before? $? - 2 = 3$

		Total Unknown	Addend Unknown	Both Addends Unknown[7]
Part-Part-Whole	Put Together/ Take Apart[8]	Three red apples and two green apples are on the table. How many apples are on the table? $3 + 2 = ?$	Five apples are on the table. Three are red and the rest are green. How many apples are green? $3 + ? = 5,\ 5 - 3 = ?$	Grandma has five flowers. How many can she put in her red vase and how many in her blue vase? $5 = 0 + 5,\ 5 = 5 + 0$ $5 = 1 + 4,\ 5 = 4 + 1$ $5 = 2 + 3,\ 5 = 3 + 2$

		Difference Unknown	Bigger Unknown	Smaller Unknown
Compare	Compare[9]	("How many more?" version): Lucy has two apples. Julie has five apples. How many more apples does Julie have than Lucy? ("How many fewer?" version): Lucy has two apples. Julie has five apples. How many fewer apples does Lucy have than Julie? $2 + ? = 5,\ 5 - 2 = ?$	(Version with "more"): Julie has three more apples than Lucy. Lucy has two apples. How many apples does Julie have? (Version with "fewer"): Lucy has 3 fewer apples than Julie. Lucy has two apples. How many apples does Julie have? $2 + 3 = ?,\ 3 + 2 = ?$	(Version with "more"): Julie has three more apples than Lucy. Julie has five apples. How many apples does Lucy have? (Version with "fewer"): Lucy has 3 fewer apples than Julie. Julie has five apples. How many apples does Lucy have? $5 - 3 = ?,\ ? + 3 = 5$

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[6] Adapted from Boxes 2–4 of *Mathematics Learning in Early Childhood*, National Research Council (2009, pp. 32–33).

[7] These take apart situations can be used to show all the decompositions of a given number. The associated equations, which have the total on the left of the equal sign, help children understand that the = sign does not always mean *makes* or *results in* but always does mean *is the same number as*.

[8] Either addend can be unknown, so there are three variations of these problem situations. Both Addends Unknown is a productive extension of this basic situation, especially for small numbers less than or equal to 10.

[9] For the Bigger Unknown or Smaller Unknown situations, one version directs the correct operation (the version using *more* for the bigger unknown and using *less* for the smaller unknown). The other versions are more difficult.

Name _____ Date _____

(5)   (7)   (8)

_____ children are playing on the playground. Some are playing on the slide, and some are playing on the swings. How many children are playing on the slide, and how many children are playing on the swings?

Strategy 1:

Slide _____   Swings_____

Number Sentences: _____ = _____ + _____

or _____ + _____ = _____

Strategy 2:

Slide _____   Swings _____

Number Sentences: _____ = _____ + _____

or _____ + _____ = _____

Name _____ Date _____

(6)   (8)   (9)

_____ children are eating apples. Some are eating red ones, and some are eating green ones. How many children are eating red apples, and how many children are eating green apples?

Strategy 1:

Red apples_____   Green apples _____

Number Sentences: _____ = _____ + _____

or   _____ + _____ = _____

Strategy 2:

Red apples _____   Green apples _____

Number Sentences: _____ = _____ + _____

        or   _____ + _____ = _____

Name _____ Date _____

(6)   (7)   (10)

Mom has _____ flowers. How many can she put in her red vase, and how many can she put in her blue vase?

Red vase_____   Blue vase_____

Number Sentences: _____ = _____ + _____

  or   _____ + _____ = _____

Strategy 2:

Red vase _____   Blue vase _____

Number Sentences: _____ = _____ + _____

        or   _____ + _____ = _____

Name _____ Date _____

(5, 2)   (6, 1)   (7, 3)

_____apples were on the table. I ate _____apples. How many apples are on the table now?

Strategy 1:

Solution: _____

Number Sentence: _____

Strategy 2:

Solution _____

Number Sentence:_____

Name _____ Date _____

(5, 3)   (6, 4)   (9, 5)
_____dogs were in the yard. _____dogs ran away. How many
dogs are in the yard now?

Strategy 1:

Solution: _____

Number Sentence: _____

Strategy 2:

Solution _____

Number Sentence:_____

Name _____ Date _____

(7, 3)   (8, 4)   (10, 6)
_____children were standing in line. _____children got out of
line. How many children are still in line.
Strategy 1:

Solution: _____

Number Sentence: _____

Strategy 2:

Solution _____

Number Sentence:_____

Name _____ Date _____

(5, 4)   (6, 2)   (9, 1)

_____ghosts are in the haunted house. _____more ghosts join
them. How many ghosts are in the house now?

Strategy 1:

Solution: _____

Number Sentence: _____

Strategy 2:

Solution _____

Number Sentence: _____

Name _____ Date _____

(5, 3)   (2, 7)   (5, 5)

Mom baked _____pumpkin pies. Then she baked _____more.
How many pies did she bake in all?

Strategy 1:

Solution: _____

Number Sentence: _____

Strategy 2:

Solution _____

Number Sentence:_____

Name _____ Date _____

(4, 3)   (2, 6)   (6, 4)

_____crows sat on a scarecrow. _____more joined them. How many crows are there now?

Strategy 1:

Solution: _____

Number Sentence: _____

Strategy 2:

Solution _____

Number Sentence:_____