Addition and Subtraction Problem Type Sorting Activity Directions

This activity is designed to be used with educators as they build their math minds to become familiar with all the various word problem types that involve addition and subtraction. The first set of questions is adapted from the progressions document of the CCSS. It is a great first step and provides scaffolds such as the fact that all the "Add to" problems involve bunnies and so on as well as the equations that represent each problem. The next activity in this file includes problems that are all independent of each other and there are no equations so participants really need to think about the situation as well as what is unknown.

To do the activity, facilitators will print out the sheet of problems they wish their participants to begin with and cut out all the problems. Using the blank word problem chart, participants will then determine which problems belong in which boxes and continue until each word problem is in one of the boxes. Next, participants will take the answer key and correct their own placement of the word problems. This activity is best done with partners or in groups so that participants get the opportunity to explain why they think a certain problem belongs where they are putting it. It is also important, once the activity is done, that facilitators lead a debriefing session to discuss what participants learned while doing the activity.

ADDITION AND SUBTRACTION PROBLEM TYPES

	Result Unknown	Change Unknown	Start Unknown
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
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	Both Addends Unknown	Addend Unknown
Put Together / Take Apart	Three red apples and two green apples are on the table. How many apples are on the table? 3 + 2 = ?	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	Five apples are on the table. Three are red and the rest are green. How many apples are green? 3 + ? = 5, 5 – 3 = ?
	Difference Unknown	Bigger Unknown	Smaller Unknown
Compare (can be 2 types- using the words more and fewer)	Lucy has two apples. Julie has five apples. How many fewer apples does Lucy have than Julie? 2 + ? = 5, 5 – 2 = ?	Julie has three more apples than Lucy. Lucy has two apples. How many apples does Julie have? 2 + 3 = ?, 3 + 2 = ? *harder version if uses word "fewer" and bigger is unknown	Lucy has 3 fewer apples than Julie. Julie has five apples. How many apples does Lucy have? 5 – 3 = ?, ? + 3 = 5 *harder version if uses word "more" and smaller is unknown

Darker shading indicates the Kindergarten problem subtypes. Gr. 1 and 2 students work with all subtypes and variants. Unshaded (white) problems are the most difficult subtypes/variants that students should work with in Grade 1 but need not master until Grade 2.

1These 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.

2Either 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.

3For 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.

Adapted from CCSS-M TABLE 1: Common addition and subtraction situations.6 From K-5 Operations and Algebraic Thinking Progression, https://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf (pg 9)

ADDITION AND SUBTRACTION PROBLEM TYPES

	Result Unknown	Change Unknown	Start Unknown
Add To			
Take From			
	Total Unknown	Addend Unknown	Both Addends Unknown
Put Together / Take Apart			
	Difference Unknown	Bigger Unknown	Smaller Unknown
Compare (can be 2 types – using the words “more” and “fewer”)			

ADDITION AND SUBTRACTION PROBLEM TYPES

	Result Unknown	Change Unknown	Start Unknown
Add To	Justin had 2 video games. He bought 3 more. How many video games does he have now?	Janice had two cupcakes. Marquis gave her some more. Then she had five cupcakes. How many cupcakes did Marquis give her?	There were some ducks in a pond. Three more ducks flew in. Then there were five ducks in the pond. How many ducks were in the pond at the start?
Take From	Five grapes were on the vine. I ate two of them. How many grapes are on the vine now?	Five horses were in a field. Some of them went into the barn. Then there were three horses in the field. How many horses went into the barn?	Kathryn had some brownies. She gave 2 of them to Al. Then she had three brownies left. How many brownies did Kathryn have at the beginning?
	Total Unknown	Addend Unknown	Both Addends Unknown
Put Together / Take Apart	Three girls and two boys are playing a game. How many children are playing the game?	Vibiana had 5 headbands. Three are yellow and the rest are blue. How many headbands are blue?	There were 5 children playing on a playground. How many children could be on the swings and how many could be on the monkey bars?
	Difference Unknown	Bigger Unknown	Smaller Unknown
Compare (can be 2 types – using the words “more” or “fewer”)	Dan has two Mickey Mouse pencils. Ann Elise has has five Mickey Mouse pencils. How many fewer pencils does Dan have than Ann Elise?	Matthew has three more stickers than Chris. Chris has two stickers. How many stickers does Matthew have?	Chris has three fewer baseball cards than Mary. Mary has five baseball cards. How many baseball cards does Chris have?