

# Algebraic Thinking (Equality) Trajectory

<b><u>Limited Evidence Of Equality</u></b> <b>(algebraic thinking)</b>	<b><u>Have A Strategy</u></b> <b>(eg. visual comparison, counting, adding/ subtracting)</b>	<b><u>Flexible</u></b> <b>(more than one strategy)</b>	<b><u>Relational</u></b> <b>(moving to generalizing, relationships between numbers)</b>
<ul style="list-style-type: none"> <li>-lost in the task</li> <li>-randomly grabbing collections of cubes</li> <li>-building towers</li> <li>-focus on non essential elements (i.e., colour, materials)</li> <li>-not understanding the vocabulary (instructions)</li> <li>-counting issues (i.e., little one-to-one correspondence, mis-identifying a unit)</li> <li>-limited use of comparisons of quantity, length etc (fragile use of conservation)</li> <li>-if they didn't recognize when they had repeated a combination</li> </ul>	<p><u>One of the following:</u></p> <ul style="list-style-type: none"> <li>-adding-on</li> <li>-comparing lengths</li> <li>-counting all</li> <li>-visual comparing (size &amp; length)</li> <li>-"same size"</li> <li>-kids notice what was the same (i.e., 4 shaped like a die and only using the part that was different)</li> <li>-use of conservation and cardinality when using number</li> <li>-suppressing colour</li> </ul>	<p><u>Strategies in</u>  <u>←previous column in combination with:</u></p> <ul style="list-style-type: none"> <li>-using two sources of information</li> <li>-following a pattern and systematically organizing (i.e., visual strategy or comparison -stair case, organizing finding pairs - pairs where random and then were organized.)</li> <li>-specialized pairs and then organizing</li> <li>-suppressing colour</li> </ul>	<ul style="list-style-type: none"> <li>-flipping lengths to see "sameness" (commutative property)</li> <li>-using multiple sources to generalize</li> <li>-understanding of how many different combination are possible for 8, 9, 10 and can see the relationship between the # of units and the # of combinations</li> <li>-thinking abstracting (known fact)</li> <li>-moving to generalization</li> <li>-following a pattern and systematically organizing (i.e., add on / subtract one 11 +1, 10 + 2, 9 + 3 etc.)</li> <li>-suppressing colour</li> </ul>

**??\*symbolic notation??**

$$a+b=c$$

$$c=a+b$$

$$a=a$$

$$a+b=b+a$$

$$a+b=c+d$$

**??\*using gestures for balance**

**??\*using language to express representation**

