

# Assessing Math Concepts

Math Perspectives created this Q&A newsletter in order to support and stay connected with our Assessing Math Concepts (AMC) community. We encourage you to share your questions with us and other educators across the country who have taken on the same challenge of improving the teaching and learning of mathematics in their classrooms. Please send your questions to info@mathperspectives.com.



Kathy Richardson

## ASSESSMENT—COUNTING OBJECTS

**Q** What are considered "efficient" strategies that lead to a correct solution as opposed to a strategy that leads to a correct solution? This is for kindergarten. For students solving an addition or subtraction problem. Thank you!

**A** I think the term "efficient" is defined differently based on the situation. I think of efficient as the strategy with the fewest steps. So when adding and subtracting, the least efficient strategy would be counting all the objects. More efficient strategies would be those where the child is using what they know to figure out what they don't know.

For example, a child might know he has 4 in a pile and be able to start counting with 4 without going back to counting from 1.

Another situation might be when a child sees a relationship. An example of this is a child who just solved  $2 + 4$  sees that  $4 + 2$  would result in the same answer. It is also efficient if a child just knows the answer without needing to figure it out. Many kindergarten children know  $2 + 2$  is 4 for example.

However, I do not consider strategies that lack meaning for the child to be "efficient". That is why I think efficiency depends on the situation. What is efficient for one child is not efficient for another.

The most efficient way for most kindergarten children to arrive at an answer to an addition or subtraction problem is likely to be counting all. They can become more efficient as counting becomes easier for them so they don't get mixed up when counting or need to recount to make sure they are right. Some kindergarten children will realize that they don't have to count the 4 again when they already know they have 4; but other children will not really trust that they can get the right answer unless they start counting from 1.

I hope these thoughts are helpful to you. Let me know if you have any questions about my definition or if any additional questions come up. ~ Kathy

## ASSESSMENT—HIDING

**Q** I am finishing up with the Hiding Assessment with my first graders. I was trained that when you begin the Part Two "Without Counters" section of the Hiding assessment, you begin at the highest number they got an A on in Part One "With Counters". So if a child's instructional level is an A for numbers 4, 5, and 6 and a P for 7, I would begin with the number 6 for "Without Counters"? Do I need to begin at 4?

Also if a child is an A for all numbers up to 10, do I need to begin

at 4 for "Without Numbers? My District Math Specialist is saying we need to do this. I don't think it makes sense and I feel it is a waste of time. It's so laborious to go from 4 to 10 for these children.

Thanks in advance for your reply.

**A** I wrote the assessments to help teachers provide appropriate instruction for their students. This means when you find the largest number the child knows without counting (A), and the smallest number they got a P on, you know the appropriate instructional range. You get additional information about the strength of the knowledge of parts, if you assess the numbers the child has an A on with Part 2 as well. Sometimes, those at the district level use the assessment for different purposes and require some additional information for reporting purposes. That has to be a district decision.

However, for instructional purposes, I do not think it is necessary for teachers to assess every child with every number and I would never want a child to sit through assessments on numbers from 4 to 10 at one sitting. If you have no information about a child, I suggest you start with 5 and depending on what the child does, I would go on to larger numbers or back to smaller numbers. We are looking for the largest number the child knows quickly without counting for both Parts 1 and 2, and the numbers where they need practice. Sometimes a child will have an A on 5, a P on 6, and an I on 5. That information is clear and the assessment should go quickly. However, sometimes, you find a child can get an A on 5, and then will get Ps for several larger numbers. We recommend when you have 2 Ps in a row, you can stop assessing because you know what the child needs to work on. If I reassess a child after instruction, I would start with the lowest number they had a P on or sometimes just to confirm I might start with the largest number they got an A on. This is because sometimes children get so focused on what they are working on, they forget what they used to know. If I am assessing a child for the first time that I believe know parts for larger numbers, I would start with 6 or 7. If I find out, they weren't as strong as I thought, I can always go down to smaller numbers. Part 2 (Without Counters) is harder for most first graders than Part 1 (With Counters), so typically I suggest you start with the lowest number they got an A on. But if you have a child who knows from 4 to 10, and hasn't been previously assessed on Part 2, I would probably start with 8 and see what happens.

If you are gathering information for instruction, then it makes sense to be flexible. Some children will be strong with counters but not when there are no counters. I would assess more numbers with that child. Another child may just know all the parts of numbers to 10 with or without counters so I would not need to assess every number.

Let me know if you or the math specialist have any further questions. I will be happy to help if I can. ~ Kathy

## ASSESSING MATH CONCEPTS INSTRUCTIONAL LEVELS

**Q** Where can I find what N, I, and A mean?

**A** N, I, P, and A describe Instructional Levels. You can find the explanations for these Instructional Levels at [http://assessingmathconcepts.com/pdf\\_docs/amc-understanding-the-instructional-levels-rev0214.pdf](http://assessingmathconcepts.com/pdf_docs/amc-understanding-the-instructional-levels-rev0214.pdf) ~ Kathy