Math Perspectives Teacher Development Center
March 2017
Vol. 2 No. 3

Assessing & Developing Math Concepts

Stay Connected!

Kathy Richardson is the author and developer of the Assessing Math Concepts (AMC) series of assessments and the Developing Number Concepts (DNC) series for Kindergarten through Second Grade Mathematics. Kathy, Program Director for Math Perspectives, is one of the most respected early childhood mathematics educators. Kathy answers questions from teachers across the country who are using AMC and DNC.

If you have questions for Kathy, please send them to Math Perspectives at info@mathperspectives.com.

COUNTING OBJECTS ASSESSMENT—PART 1, TASK 1

Q I am new to the online version of Assessing Math Concepts and I am loving it! My question is on the Counting Objects Assessment, Part 1 Task 1. After students make their estimate, say of 32 counters and then count the pile, is the actual number that the student counted recorded. The first question after counting is, "How many did you count?" The student could say, "31." So, what if the student counted accurately in a rote sequence but came up with the incorrect number due to a one-to-one correspondence error? Is the incorrect number stated recorded anywhere as part of the assessment? Thank you.

A The error you are referring to will be accounted for when you select the response for Keeping Track. The following descriptions of the possible responses for Keeping Track are available as you assess if you select the i (information) for Task 1. I have also listed them here. If a child is off by one or two, you would select c) Loses track.

Keeping Track:
(a) Keeps track with ease
(b) Keeps track with difficulty (The student gets mixed up and starts over, counts and recounts to check accuracy, or works with great effort to accomplish the task.)
(c) Loses track (The student is off by one or two.)
(d) Can't keep track (The student leaves out some counters or counts some more than once.)
(e) Lacks one-to-one (The student does not say one number for each object they count.)

Also since the student counted correctly all the way to 31, for Rote Sequence, I would select "Knows Rote Sequence" since she counted almost to 32 and didn't make any errors along the way.

If you want to record the actual number the student counted, you could put it in the Notes section of the assessment.

I hope this is helpful. Let me know if you have any additional questions. *~ Kathy*

TWO-DIGIT ASSESSMENT and SUBTRACTION ASSESSMENT

Q I have teachers who are frustrated with the Two-Digit Addition and Subtraction assessment. Their frustration lies in that when a student initially combines two numbers such as 16 and 28, on the calculators into tens and ones, many students are adding the largest quantities and noting 3 tens and 14 ones, but when asked for the total, they understand that the 14 ones is an additional 10 and 4 ones and gives the correct total of 44. However, the assessment indicates that those students are a N (Needs Instruction). In light of TEKS 2.2A (Texas Essential Knowledge and Skills)- use concrete and pictorial models to compose and decompose numbers up to 1,200 in more than one way as a sum of so many thousands, hundreds, tens, and ones, teachers felt if students understood how to compose those two, those students had a higher level of mathematical thinking than a N. In addition, during Number Talks when students are mentally adding two-digit numbers, the majority of students' strategies initially combine the identified tens first and then determine the ones (and if there are enough to make another ten). Can you help provide why this assessment designates these students at a N (Needs Instruction)?

A I understand your teacher's frustration. Because we knew that sometimes children report the number of tens they got by adding just the tens in the tens place and the number of ones as the total they got by adding the ones, we put a note on the first screen of the assessment. The note says: If the student adds the tens and ones without making all the tens possible, say: "Make all the tens you can."

So before the teacher enters 3 tens and 14 ones, she/he can tell the child to make all the tens they can. Then if the child takes the ten out of the 14 and adds it to the other tens and says there are 4 tens with 4 ones left over, the teacher can enter 4 tens and 4 ones instead of 3 tens and 14 ones. It is also possible to go back to the previous screen and make a correction if the teacher enters 3 tens and 14 ones before telling the child to make all the tens they can.

Eventually, we want the children to spontaneously combine all the tens even when one of the tens is the result of adding the ones. We don't want them to end up thinking of adding 14 to 30, but rather taking the ten from the 14 to put with the other tens. Asking them to make all the tens they can before reporting what they got will help them understand their task is to make all the tens possible.

Your teachers should be a lot less frustrated once they realize it is okay for them to clarify the question for the children.

The N is supposed to describe those children who do not yet know that the number of tens and ones and the total are the same.

Let me know if you have any other questions. ~ *Kathy*

GROUPING TENS

Q I have a question about the Grouping Tens assessment. When I asked the question for the student to add/subtract 30, the student got the answer correct. When I asked him how he figured it out, he basically told me that he stacked the problem in his head and added the ones and then the tens. Which strategy would this fit under? The strategies choices are: Add 10, Count by 10s, Count by 1s, Guesses.

A Since it is impossible to list all the responses a child might make, I have a rule of thumb on how to handle it. I think back to the instructional levels and what they mean.

Ready to Apply (A) means the child fully understands and does not need any more instruction on this concept.

Needs Practice (P) means the child understands what is happening but needs more work to become proficient.

Needs Instruction (I) means the child has just an inkling of what is going on and needs quite a bit of support from the teacher.

Needs Prerequisite (N) means the child needs to work on something else before he is ready for this concept.

Those levels correspond to the following responses:

A Adds tens
P Counts by tens
I Counts by ones
N Guesses

Since there is not a response that fits, I would choose the instructional level that fits. I would pick Counts by tens which means the child Needs Practice. I chose this because he would not have gotten to this part of the assessment unless he had a pretty good idea of tens and ones.

Then, I would make a note under comments that he used the standard algorithm to get the answer. Then during instruction, I would work on having him see that he can add groups of tens to any number without using the algorithm-but just by thinking about how many tens he would have if he added them. ~ *Kathy*

If you're using Assessing Math Concepts and have a question regarding any of the nine assessments, we'd love to hear from you. Please email us your question to info@mathperspectives.com.

If you are using the paper Student Interview forms and would like to receive information on the Web-based version or professional development, please contact us at info@mathperspectives.com.