Project INSPIRE Lesson 3 (10:07)

SPEAKER: Pre-kindergarten, first-grade students, Nemeth Code within UEB contexts and strategies for supporting the student in building math skills.

Lesson 3, multiple-choice problems and spatial problems.

Slide 2 has the objectives. You're going to be able to read and write tally marks, problems with multiple-choice answers, and spatial problems.

Slide 3 introduces you to tally marks. Unlike print, where we draw four lines and then have a line going through diagonally, in braille, a tally mark is represented with dots 4-5-6, and we put them in groups of five.

So for example, down at the bottom of slide 3, I show you how to braille 7 using tally marks. So I do five tally marks, which, again, are dots 4-5-6, a space, and two tally marks. When I go to braille three tally marks, I do three cells of dot 4-5-6. For the number 14, I braille a set of five tally marks, followed by a space, another set of five tally marks, followed by a space, and then four tally marks.

Slide 4 talks about using the English letter indicator with multiple-choice answers. The English letter indicator is like the Grade 1 indicator in UEB, dot 5, 6. When you're in Nemeth Code, and you have letters for problem choices, you're going to use the English letter indicator in front of all 26 letters. That means A, I, and O get an English letter indicator. You're going to follow the capitalization and punctuation for letters in multiple-choice answers. And I'll show you what I mean in just a minute.

When you go to Format the multiple-choice problem, the actual problem itself begins in cell 1 with run-over in cell 5. So you'll hear people say 1-5 formatting. The answer choices begin in cell 3 with run-over subsequent lines in cell 5, or 3-5 formatting.

Slide 5 provides you an example of a capitalized answer choice. So I have the problem, 1 period, 52 minus line equals 34. And then the student has four choices, capital A, period, 16, capital B, period, 18, capital C, period, 20, and capital D, period, 28. If I look at the braille, you'll notice that I begin with my opening Nemeth indicator. So that's in cell 1, dot 4 5 6, and in cell 2, 1, 4, 6. On the next line, I braille my problem beginning in cell 1. So numeric indicator 1, punctuation indicator period, and then the problem 52 minus line-- in this case, a long dash-- equals 34.

My answer choices begin in cell 3. I begin with my English letter indicator, dot 5-6, my capital, my A, my punctuation indicator period, and then a space, and my choice is 16. And I repeat that for B period, which is capitalized B, capitalized C period, and capitalized D period. So I want you to take a look at that formula, so to speak, of English letter indicator, capital, the letter. The punctuation indicator is a period. Notice on the last line where I have capital letter D, period, 28, I then put a space, and I terminate Nemeth with my Nemeth terminator, dot 4-5-6-1-5-6.

Let's move on to slide 6 and give you an example of a lowercase answer choice. What makes this is different here is that I do not have a capital sign with my letter choices. Otherwise, it's really the exact same thing we just talked about. So in this case, I have problem 2. Which problem has the largest sum? You look at the example and see I begin in cell 1. I'm in UEB at this point. So I need to begin Nemeth for my answer choices.

So notice that my opening Nemeth indicator is in cell 3, because that's where my formatting is for the choices. So I'm going to open Nemeth which is dot 4-5-6-1-4-6. And then I have my four lines of answer choices. So for the first one, I have English letter indicator a, punctuation indicator, period, space, 24 minus 2.

Second choice is b, period, 18 plus 3. So again, I have the English letter indicator b, punctuation indicator period, and then my 18 plus 3. You'll notice that for choice C, same type of format, English letter indicator c, punctuation indicator period, and then 26 minus 5. And then with D, I do my English letter indicator d, punctuation indicator period, 19 plus 6. I have my space, and then I terminate Nemeth with my 4-5-6-1-5-6.

So this is the format you want to use for multiple-choice problems for your student. Your turn. Activity 3A. I'd like you to pause and interline the multiple-choice problem below. Once you've done that, come back and check your work.

Slide 8 provides the answer for how to interline this multiple choice problem. I hope you paid attention to the formatting as you went along, to reinforce that we begin the problem in cell 1, with run-over in cell 5, and then the answer choices in cell 3. And if we had run over, those would be in cell 5.

Let's go on, on slide 9, to activity 3B. This time I'd like you to braille the multiple-choice problem below. So after you've brailled this problem, go ahead and come back and check your answer. Pay attention to your formatting as you are Brailling.

Slide 10 has the answer key for activity 3B. Check your work carefully to make sure that you used UEB where you needed to and Nemeth where you needed to, that your formatting is proper, and that you used your Nemeth code opening indicator and your Nemeth terminator properly. When you're ready after you've checked your work, let's go on to the next slide.

We're on to slide 11, and we're going to talk briefly about spatial problems for our young learners. The most important thing with spatial problems is that your student needs to understand that they are vertically aligned. So I must align my columns. When I'm doing addition and subtraction spatial problems, the addition or subtraction sign goes one cell to the left of the widest number above the separation line.

So if I look at my example, I'll see that I have a 7, and then underneath that, I have minus 6. And that is followed by the separation line, which is dots 2-5. The number of cells of dots 2-5 I use for my separation line depends on the width of my problem. My separation line has to go one cell to the left and one cell to the right of the widest part of the problem.

So in my example problem, 7 minus 6 takes two cells for the minus 6. So my separation line is four cells. And you'll notice, a separation line goes one cell to the left to the minus sign and one cell to the right of the 6. So this formatting is very important for your students to understand.

Often, spatial problems come across the line, and you need to have at least one cell between separation lines. For many of our students, two cells is preferred, so that gives them a little more space. So if you look at my examples, I have 4 minus 2, 10 minus 3, 12 minus 6, all on the same line. I want you to check to make sure that my minus or my plus sign is one cell to the left of the widest number. In this case, we have all minus problems, so subtraction problems.

So if you look at that middle problem, 10 minus 3, you'll notice that my 10 and my 3-- if I look at the 0 in the ones column and the 3, they line up. There's nothing underneath my 1 representing 10, because there is not a two-digit number. So then, my minus sign has to go to the left of the 10, not the left of the 3, because remember, the plus or the minus sign is going one cell to the left of the widest part of the problem. You'll see the same thing in 12 minus 6.

Let's go ahead and go on to slide 13, which is activity 3C. I'd like you to pause and interline the spatially aligned problems.

Slide 14 provides you the answer key for activity 3C for the first line of problems, so please check your work carefully. And slide 15 provides you the answer key for the second line of problems in activity 3C. So go ahead and check your work.

Congratulations you have finished this PowerPoint.