Project INSPIRE: Course 7, Lesson 2

Transcript

SPEAKER: Welcome to "An Introduction to UEB Math/Science for Pre-Kindergarten to First Grade Students and Strategies for Supporting Math Learning." This is "Lesson 2: More Linear Problems, Word Problems, and Additional Signs of Omission."

Slide 2 has the objectives. You are going to be able to read and write linear math problems using the dash, underscore, or shape to represent a missing number, sign of operation, or sign of comparison. You're also going to be able to read and write math word problems.

Let's go on to slide 3 and do a quick review of the question mark and visible space as signs of omission that we just went over in Lesson 1. So you'll remember that the question mark is dots 2-3-6, the visible space is dots 3-4-6, and we're going to use that visible space to represent a blank space in print. But there is an exception, of course, when there actually is a blank left to answer the problem.

Now, it's really important that you follow print when a question mark or blank space in print shows a missing number, sign of operation, or sign of comparison. So just like print readers, our braille readers need to understand that space is there for a purpose. And at this grade level, it's for them to fill in what's missing. You're going to space each sign of omission the same way you space what it replaces. So same rules apply whether we're replacing a number or a sign of operation, for example, or a sign of comparison. Just pretend that sign is there, and space the way you would if it was there in actuality.

All right, we're going to move on to slide 4. We want to talk to you about the grade 1 indicator. That's dots 5-6. And we always use the grade 1 indicator when we want to avoid confusion. So in the case of what we're talking about here in math, gang, this is when a question mark is standing alone. And I've got two example problems for you. So my first problem is problem 1, 5 plus 5 equals question mark. That question mark is standing for the number-- in this case 10-- and that's what our student needs to write, is 10. So how do I braille this? Going to braille my 1, period, space, my numeric indicator, 5, my plus sign, which, remember, is dot 5, dots 2-3-5, my numeric indicator, 5, that space, that equal sign, dot 5, dots 2-3-5-6, space. And then I'm going to put my grade 1 indicator, dots 5-6, in front of that question mark, which, of course, is 2-3-6. So notice how I put that grade 1 indicator in front of the question mark.

Now, in my second problem, which is problem 35-- we skipped ahead here, didn't we-- I have 6, question mark, 10, 12. Obviously, we want that student to replace that question mark with an 8. So how am I going to braille this? Again, problem number, 35, period, my space, 6, space. OK, here's the question mark, so I'm going to do my grade 1 indicator, dots 5-6, that question mark, 2-3-6, space, 10, space, 12.
So that grade 1 indicator question mark is representing that number, in this case, that is missing.

Slide 5. Let's talk a little bit more about this grade one indicator because you always know with the grade 1 indicator there's a lot to talk about. When I have a math problem that begins with a question mark, or if

the question mark is used after a sign of comparison-- remember, comparison is the equal sign, the less-than sign, the greater-than sign-- I am going to use a grade 1 indicator with that question mark. So here are two more example problems.

Problem 1, 1, period, question mark, minus 5 equals 63. Wow, we're getting into some higher level math here. I'm not sure if the narrator can figure out that that question mark represents-- oh, my gosh, what does it represent? 68. All right. But how do I braille this? I'm going to do my 1, period, space, grade 1 indicator, dots 5-6, question mark-- so that 2-3-6-- then add my minus sign, dot 5. Minus sign is 3-6. Numeric indicator, 5, space, equals, space, 63.

So notice how, because this problem started with a question mark, I'm going to use the grade 1 indicator dots 2-3-6 for the question mark. In my next problem, I have 2, period for my problem number, 32 equals question mark plus 17. So we're going to braille my 2, period, space, my 32, space, that equal sign, space. Now, grade 1 indicator, question mark, and then my plus sign, numeric indicator to start my 17. So in problem 2, the reason I'm using that grade 1 indicator with my question mark is because my question mark follows the equal sign. All right, so always stop and take a good look to see if you need a grade 1 indicator. So visually, I have a stop sign with a hand in it to remind you about the need to stop and check.

Slide 6, we're going to put you to work, folks. It's time for Activity 2A. I've got four problems here for you to interline. A sign of comparison is missing in the fourth problem, so just to cue you in on what's going on here. All right, when you're ready, go ahead and come on back.

So on slide 7, I have the answer key to Activity 2A. Did you do it correctly for problem 4? Make sure you check that one, and check problems 1, 2, and 3. When you're ready, we're going to go on to slide 8.

All right, on slide 8, I want to talk with you about the dash and the underscore as a sign of omission. So my dash is dot 6, dots 3-6, so it's going to take me two cells to write a dash. My underscore is dots 4-6, dots 3-6. So my first problem, I have 7 plus dash equals 10. So numeric indicator, 7, my plus sign, and then that dash, dot 6, dots 3-6, space, my equal sign, space, 10. So that dash is representing, in this case, the number 3. My second problem is underscore minus 12 is less than 35. So I'm going to start out by brailling the underscore in two cells, dot 4-6, 3-6, my minus sign, my 12, space, then my less-than sign-- remember, that's dot 4, dots 1-2-6-- always put a space on either side of that sign of comparison-- and then my 35.

Slide 9. With our young students, we often have shapes used for sign of omission. The first thing I need you to do is to figure out is this shape meaningful? So you're going to look at the material you're brailling. For example, if this worksheet happens to have triangles and circles where the student's supposed to be filling in the number and then, at the end, they're asked to question what do all the circles have in common, well, then it's important if all of the answers in those circles are even numbers that our student needs to see the circles versus the triangles because they're being asked to do something with those shapes. They're not just there to fill in-- to say, fill something in me, but they also have a purpose.

If you do need to use a shape for a young student-- in this case, we're talking about pre-kindergarten, kindergarten, and first grade-- we're going to have you use a sticker or other texture to represent the shape. Now, it's not best practice to replace the shape with a braille omission symbol. I know that's really tempting for a lot of us. We're in a hurry. Our stickers are in our car, and the braillewriter is here in front of us. But best practice, folks, when we're talking about these young people, is to use a sticker or a foam shape. So you should be having some of these in the space where you're preparing materials for your young braille readers.

We really want to make sure that the student has multiple opportunities to really tactually explore shapes. So yes, those shapes, in this case, are standing for omission, but this is a great way to reinforce that a rectangle has four sides and a triangle has three sides, so they need to have shapes under their fingers. So let's go on to slide 10, and I'm going to show you an example using a rectangle. So my print reader is seeing 7 equals rectangle plus 4. It happens to be an outline of the rectangle because we expect the student to write in 3 inside that rectangle. Our braille writer is not going to be writing inside the rectangle, friends. So what I've done here is I've gotten out a green sticker that represents a rectangle. In this case, it's a rectangle shape. I've put it on to the worksheet, and this way, if the student has some usable vision, they're going to see that it's green, which is good because it might contrast there with that white braille paper, but tactually, that student is going to feel that green rectangle. It could be a purple rectangle. It could be an orange rectangle. If the sighted students who are looking at the print, the rectangle doesn't have a color meaning. It doesn't matter what color you use, so don't get stressed out about that you need to go out and buy green rectangles because that's what Project INSPIRE uses.

We're going to go on to slide 11 and have you complete Activity 2B. I've got four problems for you to interline. Look, there's some shapes in them. Whoo-hoo! All right, when you're ready, come on back. Slide 12 is the answer key for Activity 2B. Check to make sure that you did well with your interlining and that everything is copacetic.

All right, slide 13. We're going to actually have you do some brailling here on Activity 2C, so you have three problems to braille. Now, friends, if you don't happen to have a blue rectangle sticker at home, it's OK. We'll let you slide on that one. But make sure that know that you would be using a texture or a sticker if you were actually handing this to your braille reader. All right, let's go on to slide 14 and have you check Answer Key 2C. How did you do?

I'm ready to go on to slide 15 and talk about reading and writing simple word problems. Now, when we're talking about our pre-K, kindergarten, and first grade students, we are double-spacing materials for this population. So I have double-spaced my examples here to illustrate to you that you will be double-spacing for your student. So I have the word problem "Joe wrote 3 plus 6 equals 9, is he correct?" Folks, I just start brailling along. I'm going to start in cell 3. So I'm treating this as a paragraph. So Joe wrote 3 plus 6, space, equals, space, 9, period. Now, it worked out perfectly fine for me that I got to keep all of that problem on the same line. If, for some reason, I was brailling along in this problem, all did not fit on the same line, please, please, please do not divide the problem. Bring the problem down-- the whole

problem-- to the next line, OK? So in my case, on my second line that begins in cell 1, I wrote, is he correct, question mark.

My second word problem is 3 plus 4 and 2 plus 5 are equal. Well, that's not really a word problem, is it? It's a statement. Again, I'm going to begin in cell 3. I'm going to braille 3 plus 4, space, the word "and," my next problem, 2 plus 5, space, are equal. So I'm following the inkprint. I'm brailling my math problems just the way I've been showing how to braille them in UEB Math/Science, keeping my problem all together. Just pretty straightforward. You can do this. Don't forget to double-space, friends.

All right, slide 16 talks about numbering simple word problems. So I'm going to number my problems beginning in cell 1, with runover lines going in cell 3. So this is opposite the paragraphs we just looked at. So when I have a numbered problem, start in cell 1, runover in cell 3. So I have problem 5 here. "Ricardo has 19 marbles, and Tiffany has 13 marbles. Who has more marbles?" Oh, man. I hope I can do the math on this one. All right. That's not my job, though. My job right now is to braille this accurately. So I'm going to start with my problem number 5 in cell 1. I'm going to braille Ricardo has 19 marbles and Tiffany-- oh, ran out of room, so I'm going down to the next line-- but of course, I'm leaving a blank line in between because I'm double-spacing-- has 13 marbles. Who has more marbles, question mark. So following that inkprint is what we're talking about here with numbered problems. We're talking about beginning in cell 1, runover in cell 3.

Slide 17. Time to put you back to work with that brailler. It wants you to do Activity 2D. You've got four word problems to braille. Remember, you're going to be double-spacing, and make sure that you keep all that math together. So when you're ready, come on back.

Slide 18. I've got my answer key for Activity 2D. Make sure that you've brailled all your word problems for problems 1, 2, and 3 correctly. Once you've checked that, we're going to go on to slide 19, and we're going to check problem 4. And slide 19 has problem 4 from Activity 2D for you to check your work.

All right, you have completed Lesson 2. So make sure you're comfortable with the concepts we went over. And when you're ready, we want you to go on to Lesson 3. Thank you.