

Project INSPIRE: Course 7, Lesson 4

Transcript

SPEAKER: Welcome to "An Introduction to UEB Math/Science for Pre-Kindergarten - 1st Grade Students and Strategies for Supporting Math Learning." This is "Lesson 4: Formatting Materials for Students in the Early Grades."

Let's get started on slide 2 with the objectives. So you're going to be able to locate and use formatting resources. And folks, resources are really important to get the work done and get it done right. We're going to make sure that you know how to format a centered heading, braille page numbers, directions, and, of course, the problems. And we're going to talk about making decisions on when to use manipulatives instead of simple tactile graphics.

So slide 3, let's talk about some really key principles here when it comes to formatting materials for young students. Predictability is so important because it allows our student to be able to develop their efficiency and to really focus on the content. If they have to spend a lot of time looking around and trying to figure out where things are, how are they going to learn that math content that is so important for them to learn at these early years?

If we set things up consistently, and we follow our rules, then our students are going to be able to quickly scan the page with their hands and learn what's actually in that document. And again, if they know what's there, then they can put their attention to focusing on that math instruction being provided by the teacher. A couple of resources we really want you to have on hand, ready to use, when it comes to formatting materials. So we have Braille Formats: Principles of Print-to-Braille Transcription. And we refer to this in the field as "Braille Formats." It's available from BANA. It's the 2016 version.

Also from BANA, we have the BANA Guidelines for the Transcriptions of Early Educational Materials. So make sure, especially when you're working with these younger students, that you have that document to reference.

And so you can get these materials from BANA on their website. They are available both in print and braille. And even though these two documents are written for transcribers, if you are a TVI, you really need to understand these principles. And if you're a paraprofessional who is in the role of just transcribing braille but not formally trained, same thing for you. Use your resources. Absolutely imperative.

All right, let's talk about how we space our lines when we're talking about our young students, on slide 5 here. So first off, we're going to double space materials when we're talking about our pre-kindergarten and kindergarten and first-grade students.

Now there are a couple of exceptions. One is puzzles. Two is spatially aligned problems. And we talked about those in lesson 3, and we're going to look at spatially aligned problems again towards the end of this lesson. Tables and titles of tactile graphics.

Now slide 6, the very simple worksheet here. The title is "Addition Practice: Worksheet 1." The directions are "Add." period. And then we happen to have four math problems that are in spatial format: $3 + 2$, $1 + 0$, $2 + 2$, and $0 + 3$.

So I'm going to go on to slide 7. And I want to first talk to you about how am I going to handle that heading, OK? We call that a centered heading in braille. In print, we would refer to that as a title. So regardless of what we're going to call it, here in braille we're going to call it the centered heading. And I'm going to place that centered heading, or that title, on the first line of the page. And when I'm preparing materials for a young braille reader, I'm leaving two – TWO -- blank lines after the heading. Now if I have a long heading, which we don't in my example, but if I had a long heading, I'm going to divide it across multiple lines. Very important. I'm always going to follow the print capitalization when I'm brailleing a heading.

And if we have sometimes bold, underline, italics, to make that title really stand out for that print reader. If that's pretty, or what I call fluff, we're just going to ignore those bold italics, different colors, whatever's being done to make it visually appealing. Unless that change in typeform has meaning for the braille reader, just ignore it, OK? Just braille that title following the imprint as far as capitalization goes, and divide across lines if it's a long title. Pretty straightforward.

Let's go on to slide 8 and talk about a concept that a lot of us struggle with, which is how do you actually center a heading. If I'm doing this centered heading with this title, first thing I'm going to do is I'm going to count up how many cells it takes. And I need to count the letters, the contractions, the spaces, the punctuation, any indicators, such as a capital indicator.

I also have to know how long my line is. Am I dealing with a 32-cell line? Am I dealing with a 40-cell line? So let's just say that I have a 40-cell line, and I count everything up, and I get 22 cells. $40 - 22$ is 18. If I divide 18 by 2, which is my next step, then that lets me know I need to start in cell 9, because 18 divided by 2 is 9. So practice your centering of headings. If you're using braille translation software, make sure you know where that function is and it'll do it for you.

So on slide 9, I have an example here where I had that same worksheet we went over on slide 7. Let's take a look at how I brailled this worksheet. So I began with my title, which is "Addition Practice: Worksheet 1." So I know that's a centered heading. I've gone and I figured out where I need to start on each of the lines because I'm going to divide this across two lines. So on line 1, I brailled "Addition Practice". It's centered. I'm going to go ahead and leave a blank line. And on line three I'm going to braille "Worksheet 1," and it's centered. Again, I'm following capitalization with the inkprint and capitalizing in braille the same way. After my title, I leave two blank lines.

Now it's time for me to braille the directions. These directions begin in cell 3 with runover in cell 1. We don't have any runover here, because all we have is "Add," period. Now notice after my directions I have a blank line. I want to explain something to you that our Project INSPIRE team spent a little bit of time discussing, and we think it's important for you to think through what we had to think through. We are double spacing material for our pre-kindergarten, kindergarten, and first-grade students. So therefore, we need to put a blank line under the directions.

However, if we look at the content that comes next, we see that we have spatial problems. And I want to remind you that we talked about, in lesson 3, that with spatial problems there's a blank line above the problem and below the row of problems. So this blank line underneath my directions, "Add." period, is actually doing double duty, isn't it? Because I'm using it for both reasons. And it's important that as you're preparing materials, just like our team has been preparing materials, that you really think through the why. And so that's why I have a blank line-- A, because I'm double spacing, and B, because spatial problems need a blank line above and below.

All right. Slide 10. It's your turn. This time we'd like you to decide if each statement is true or false. So go ahead and pause. And when you're ready, come on back.

All right. Slide 11. Here's my answer key. So make sure what you thought was true was true and what you thought was false was false here on Activity 4A.

All right. I'm going to go on to slide 12. I'm going to talk a little bit about directions preceding unnumbered problems. So this is really important. I get a little confused here as your narrator.

I need to pay attention to what comes after my directions. Are my problems numbered or not numbered? Because based on whether those problems are numbered or not, I'm going to have to make some decisions. So first, let's talk about when those problems are not numbered. So this same little worksheet we've been looking at with our heading of "Addition Practice: Worksheet 1," our title, and our directions, "Add." period, those four spatial problems-- $3 + 2$, $1 + 0$, $2 + 2$, and $0 + 3$, are not numbered. There are no problem numbers there.

So when this happens, when my directions precede or come before unnumbered problems, my directions begin in cell 3. Now if these were long directions, and I had runover, meaning a second or subsequent line, I would begin in cell 1.

I want to point out that in this example we're looking at, this worksheet, after the directions that say "Add." period, I leave a blank line. And that has nothing to do with the directions, gang. That has to do with my rule around spatial problems, that I leave a blank line above and below. So I want you to understand why there's a blank line there.

Let's go on to slide 13, and let's talk about directions preceding numbered problems. So I have a different worksheet here than the one we've been looking at before. So this worksheet says, "Comparing

Numbers". That is my title. It happens to be in bold, when I prepare my braille, I'm not going to bold that title, but I am going to capitalize "Comparing" and "Numbers" in my centered heading because I'm following the inkprint on capitalization.

The directions for this worksheet say, "Write greater than," comma, "less than," comma, "or equals in the blank." And actually the math symbols are used, not the words for greater than, less than, and equals. After those directions, I have four problems. The first one is numbered 1, 79. There's a line. 57. So we would be using our underscore symbol to represent that line. 2, period, 15, underscore 21. 3, period 32, underscore 36, and 4, period 90 underscore 13. I'm going to focus with you right now on how to braille those directions.

So when my directions are preceded by number problems, which they are here, I'm going to begin my directions in cell 5 with runover in cell five. So take a look at my braille copy, and you will see that my directions are 5-5. They are beginning in cell 5 with runover in cell 5. I leave two blank lines between the title and the directions. But there's only one blank line after the directions.

I'm ready to go on to slide 14. I'm going to talk about numbered problems with no answer choices. I'll tell you, we just keep rolling out here the different ways of brailing things. So when I have a numbered problem with no answer choices-- so this is not a multiple-choice problem- I'm going to begin that problem in cell 1 with runover in cell 3.

So I have three example problems for you here. The first one is 1, period, "How many tens are in 45," question mark. It all fits on line 1. There's no runover. So I started in cell 1. My second problem is a little longer. 2, period. "What is the sum of two," comma, "5," comma, "10," comma, "and 15," question mark. I begin in cell 1 with my numeric indicator, 2, period. I braille along, and I've got my "What is the sum of 2," comma, "5," comma, "10," comma, and oh my gosh, I am at the end of my line. I need to go to the second line, my runover line, to braille the "15" question mark. So I will begin in cell 3 with that numeric indicator for "15" question mark. OK, made it easy for you with our third example. It just takes one line, so I start in cell 1 with 3, period, "Which is more," comma, "9 - 6 or 11 - 5," question mark.

So the point we're really trying to make here, folks, is if I have a problem that does not have answer choices, I'm going to begin in cell 1 with runover in cell 3. So pay special attention to example 2.

On to slide 15. Now I'm adding in my number choices to my numbered problem. If this looks really familiar to you, it's because we just talked about it in Lesson 3. But here's what I have. I'm going to begin my problem in cell 1 with runover in cell 5. Now in the example I have in my example problem, which is 1, period, 7 plus underscore, or blank line, equals 12, there is not a second line. But if this was, let's say, a word problem, I would begin my runover in cell 5.

My answer choices-- in this case a period 6, b period 7, c period 5, and d period nine, they all begin in cell 3. When we have the answer choice of a, also if we had the answer choice of i and o, that there's no

grade 1 indicator used with that letter choice. So just a little friendly reminder from your team here at Project INSPIRE.

All right. We're going to go on to slide 16. And I have an example of another numbered problem with answer choices. And I'm going to give you a preview here on the next slide. I'm going to show you what happens when we have runover. So let's take a look at what my problem reads here. 4, period. "My cousin made cupcakes. Maria made 6 cupcakes," comma, "and Jorge made 3. Which equation shows how many cupcakes they made altogether," question mark. And then I have four choices: a, period, $6 + 3 = 8$; b, period, $3 + 8 = 11$; c, period, $6 + 3 = 10$; and d, period, $6 + 3 = 9$. Now without going back or looking ahead, how am I going to do my runover for that problem? Because obviously, problem 4 is not going to all fit on one line.

Let's go on to slide 17, and let's see if you did it the way I would do it. So what I remembered that I needed to do here is that my problem begins in cell 1 with runover in cell 5. And again, those answer choices begin in cell 3. Now we wanted to make sure everything fit on one slide for you, so we did not double space this problem. However, when preparing this problem for our pre-kindergarten, kindergarten, and first-grade student, you would double space. So take a quick look. Make sure you understand that we're beginning the problem in cell 1 with runover in cell five. Those answer choices, again, begin in cell 3.

All right. Let's go back and talk about spatial problems here on slide 18. I want to go over what our rules are for numbered spatial problems when we're going across a line. First off, I want to say that BANA does not have an established rule for how to space spatial problems across a line when we're talking about UEB math and science. And so, as our team recommended in Lesson 3, we want you to leave two blank cells between problems when we're talking about these young students in pre-kindergarten through first grade.

What's really important here is that you use consistent spacing for spatial problems on the entire worksheet or test. In other words, don't start mixing and matching. We want you to be sure that the student can distinguish the problem number from the content of the problem. And for our young students who are just learning their numbers, it can be confusing. What is the problem number and what's the number that's actually in the problem? So again, that consistency is so important. Where are you going to place those problem numbers so your student can really find them and know that they're telling you what problem you're doing, and not that that's part of what you add or subtract. And as we talked a little bit earlier, you want to leave a blank line above and below each row of spatial problems.

So on slide 19, I have another worksheet example. This one is showing you two lines of spatial problems. So my title is "Addition and Subtraction Worksheet". My directions are, "Find the answers." period. And then I have three numbered problems on the first row and three numbered problems on the second row. So on row 1, it's 1, period, $6 + 8$, 2, period, $7 - 3$, and 3, period, $9 + 2$. And on the second row, it's 4, period, $13 - 4$. For problem 4, 5 period is our problem number, and $14 + 5$. And then problem 6 is 6, period, $11 - 7$.

So let's go ahead on to slide 20 and see how I braille this. So I, of course, braille my title centered on the first line. I skip two blank lines after my centered heading. I begin my directions in cell 5, because I have numbered problems.

Now I have chosen to number my problems on the same line as the top addend. I am putting two blank spaces following a problem before the start of the next problem number. So I want you to pay attention to that when you're looking at how I've brailled this.

So I have my problem number 1, period. My top addend is 6. Then I have my plus sign. I'm following the print on how my plus sign is positioned to the left of the second addend. I'm putting my 8-- for the problem with $6 + 8$, my 8 is directly underneath my 6. And my separation line begins under the numeric indicator with the dot 5, and then 2-5 underneath the 6 and the 8.

I repeat the same concept all the way across problems 1, 2, and 3. I leave a blank line after problem 3. And let's just look at how I braille problem 4.

So I'm on the second row of spatial problems, numeric indicator 4, period. I'm going to have my top addend, which is 13. Then I'm going to have, on the second line, my minus sign to the left of my second addend. And then I have the numeric indicator from the 13 lines up with the numeric indicator from the 4 that I'm brailing now. Remember, I leave a space, because the number 4 does not have a digit in the tens column. And then I braille my 4.

Again, my separation line is going to start underneath the numeric indicator, because that's what I did on problems 1, 2, 3. I'm not mixing and matching here, gang. And so I'm going to have my dot 5 underneath the numeric indicator. And because I have a two-digit number, I have two cells, dots 2-5. I want to point out one other thing that we didn't say specifically in our previous slide, but is so important. I want you to look at my problem number. Let's go back up and look at problem number 1. Do you notice that there is a blank column, a blank cell, before the start of my addition sign on the second line of the problem?

So when I'm figuring out where to braille that top addend, I also need to consider how wide is that sign of operation going to be, and make sure I account for that when I'm brailing the position of my first addend. And I know for me, when I braille, that sometimes that takes me a little bit of thinking. So I want you to think too.

Folks, I'm going to go on to slide 21. And I'm going to point out to you that with UEB math/science, we have some leeway in how we prepare materials. I'm going to be showing you an alternate method for that same worksheet with those same six problems. And this time I'm going to use the numeric passage layout.

But before I go over this layout, I absolutely want to stress to you that the most important thing here with our young students is once you pick a method you stick with it. So let's take a look at how I'm going to use my numeric passage indicator and my numeric passage terminator to prepare this worksheet with the six

spatial problems. So as a reminder, the numeric passage indicator takes two cells. It's dots 3-4-5-6 twice. And the numeric passage terminator takes two cells. It's dots 3-4-5-6 and then dot 3. OK?

So I'm going to again center my title, "Addition and Subtraction Worksheet". Then I'm going to have my directions. These are numbered problems. So my directions, "Find the answer" begins in cell 5. Blank line. OK? Then I do my numeric passage indicator. So those two cells, dots 3-4-5-6.

Now I want to talk about how I brailled problem 1. A couple of things I want to point out here. First off, because I'm in numeric mode, there is no actual numeric indicator in the problem, OK? So we're not doing numeric indicators, because I'm in numeric mode. Because my first problem-- again, it could have been my 12th problem on the page. But because I have a problem that only has single digit addends-- in this case, with problem number one, it's $6 + 8$ -- I don't have enough room to do my separation line which takes two cells, a dot 5, dot 2-5, if I were just to start under the number. So I have to consistently, for all the problems on this page, begin my separation line under the first cell of my sign of operation.

So if we look at problem 1, period, again, I left enough space. I chose to leave one column. Maybe you want to leave two columns, but before I start my problem. So I have my addend of 6. So dots 2-3-5. On the second line, I have two cells to the left of that addend, I have dot 5 for the start of the plus sign, and dots 2-3-5 for the second cell, the plus sign. And then I have my 8, dots 1-2-5. Notice this is lined up right underneath my 6.

And then I begin that separation line. The dot 5 in my separation line begins right under that dot 5 in my addition sign. And then, in this case, I have two cells of dots 2-5. So you'll see I did this consistently, format-wise, across all six of my problems. After my sixth problem, that second line, immediately following that second line of spatial aligned problems, I'm going to terminate Nemeth by doing my dots 3-4-5-6 and my dot 3.

Now I want to know, are you questioning the Project INSPIRE team because we did not leave a blank line after the opening Nemeth passage indicator and before the Nemeth passage terminator? I hope you are, because folks, this is one of those things that we found with UEB. The rules say that you can have the line above and below spatial problems can either be a blank line, is what we've been saying all along up until now, or it can contain the numeric passage indicator or a terminator. So here's an exception to that always leave a blank line above and below spatial problems. Again, I want you to really be thinking through why we're doing what we're doing, and I want you to go to your BANA resources to make sure you're finding examples to back up what the Project INSPIRE team has done here.

We are going on to slide 22, and it's your turn. You're going to do some transcribing. So in Activity 4B, transcribe the worksheet using the layout of your choice. So you can either use the first layout we talked about or the second layout we just went over with the numeric passage indicator and numeric passage terminator. So when you're ready-- make sure you've centered your headings and you've done your directions properly-- come on back.

Slide 23, I'm going to have you check your answers to Activity 4B. If you used the first layout we went over you'll be checking your answers here on slide 23. And if you did it the second way we went over, with the numeric passage indicator, on slide 24, this is your answer key for Activity 4B. So check your work carefully for whichever way you chose to braille Activity 4B.

All right. We're going to go on to slide 25. And we're to talk about braille page numbers. Now you must leave three braille cells between the text on the line and the page number. The braille page number is placed at the end of the last line on each page. And we always do our braille page numbers consecutively-- so, 1, 2, 3. And the reason for this, folks, is if I drop a bunch of braille pieces of paper, I can quickly put them back in order by looking at those consecutive braille page numbers on the very last line in the last cells.

So here's an example on slide 26 of braille page numbers. So I have a little worksheet here. My title is, "What Number is Missing?" I've got four unnumbered problems-- $50 + 4 =$ underscore, $30 + 6 =$ underscore, $10 + 9 =$ underscore, and $70 + 8 =$ underscore.

I have a little funny green critter drawn here. Notice on my braille example-- I know we're talking about page numbers-- that there isn't any little green critter. And I just want to point that out. Again, that's, to me, is visual fluff, and we leave that off.

What am here to talk about, though, is the braille page number. So I have my centered heading, two blank lines. I have those problems all beginning in cell 1. That's towards the top of my page. But way down in the bottom, in the bottom-right corner, I have numeric indicator 1. And that is my braille page number.

Slide 27 takes us on to transcribing a worksheet. So you've got a title. You've got directions. You've got some problems. Oh, my gosh, you got adorable teddy bears. I want you, on Activity 4C, to go ahead and transcribe this worksheet. When you're ready, come on back.

All right. Slide 28 has the answer key to Activity 4C. Check your work and make sure that you have done everything properly-- not just that braille page number, but your title, your directions, your math problems.

We're going to go on to slide 29, and we're going to talk about how consistency helps students navigate braille materials easily and quickly. And I know we talked a little bit about this at the beginning of the lesson. But it's so important that we really want to reinforce this with you again.

So whether we're talking about young students or older students, you want to be consistent in formatting materials, regardless of grade level. Depending on the needs of our young students, you may choose whether you're going to put a space before and after signs of operation and horizontal problems. In all the examples we have shown you in Lessons 1 to 4 here in Course 7, we have not used spacing with our signs of operation. But you do in horizontal problems actually have that as an option to follow.

And then we really want to stress how important it is to follow the print formatting for our spatial problems, including where the signs of operations are placed. So if, let's say, I have a plus sign to the left of the second addend, I'm going to braille that plus sign to the left of the second addend in the braille copy because that's the way it was in the print copy. Consistency, consistency, consistency.

And then I'm going to go on to slide 30. And I'm going to talk about a couple of special considerations. So when I have pre-kindergarten and kindergarten students who get lots of little worksheets where they have objects to count, always, folks, use manipulatives. So make sure in that classroom there are Counting Bears, Base Ten Blocks, Digi-Blocks. Lots of options so that when the other children have a picture of seven ice cream cones, our child can have seven Counting Bears, seven Base Ten Blocks, seven Digi-Blocks. They need actual objects. When we're talking about worksheets where there's a shape drawn, use very simple tactual shapes, such as circles and squares. Have a lot of those stickers available to use.

Slide 31 talks about interlining. So when we're going to interline in braille, meaning we're adding the print to have the print available for a parent, for a paraprofessional, for a classroom teacher, we really want you to write the math above the braille. And if you look at the picture that I have in my example, I have problem 1, I have $5 - 2 = 3$. And I can see that clearly, the print over the braille.

On the second line, I have problem 2. And it's $4 + 7 = 11$. Well, that child's hands are reading the problem, OK? So if the print were underneath, as a sighted person, I wouldn't be able to see what that child is reading. But because when we interline, we put the $4 + 7 = 11$ above the braille, an adult is able to see what that child is reading in braille, so if that child needed help, let's say, for example, with the number 7, our sighted person, who doesn't know what a braille 7 looks like, would still be able to provide 7.

Wow, we have made it through Lesson 4. There was a lot of information in here. Use those resources. You're ready to go on to Lesson 5. And we're going to start talking about methods and materials for supporting these young learners in their math classes.