

**Kindergarten Matters:
Re-imagining Literacy and Mathematics Throughout the Day
Constructing Theories about Quantity, Spatial Sense and Algebraic Thinking**

[student 1 sitting on the carpet with building blocks stacked in a stair formation]

[Text on screen]: What are you noticing about the child's counting concepts and quantity relationships?

STUDENT 1: It goes up to seven steps. And they can go to that many steps if they want. [counting the base blocks] One, two, three, four, five, six, seven. [counting the tallest stack of blocks] One, two, three, four, five, six, seven.

NARRATOR: In this video segment, we enter a child's play in progress.

[Text on screen]: What are you noticing about the child's thinking?

[educator 1 walks over to student 1]

NARRATOR: He has created a growing pattern and has labelled each part with a numeral card to match the quantity of block in each tower. As he attempts to build the next predictable part of the pattern, he encounters a problem.

STUDENT 1: ...eight, it fell down.

EDUCATOR 1: Oh, so that's a problem. How could you solve that problem?

STUDENT 1: I don't know.

EDUCATOR 1: What do you think made it fall down? Do you think it was the mat? Do you think the mat is bumpy?

STUDENT 1: Yeah.

EDUCATOR 1: Do you want to try this work on something else? What would be a smooth surface where it won't fall down?

STUDENT 1: Or I an just pull them a little.

EDUCATOR 1: You could pull it a little?

STUDENT 1: So, it's just flatter.

EDUCATOR 1: OK. Do you want to try that?

[student 1 pulls on the carpet slightly]

STUDENT 1: Now it's flatter there. [stacking blocks on the carpet] Two. Three. Four. Five. Six. Seven. It falls down.

EDUCATOR 1: It falls down? What if you, what about this? Feel this, and see if you think that would be different.

STUDENT 1: On that?

EDUCATOR 1: Do you think so? Do you want to try it?

STUDENT 1: [stacking blocks on the bench] One. Two. Three. Four. Five. Six. Seven. Eight.

EDUCATOR 1: Did it work? Yeah. So, what about these ones now?

STUDENT 1: I have to move it.

EDUCATOR 1: Do you want to move them? Yeah? Which one are you going to start with?

STUDENT 1: One.

EDUCATOR 1: OK.

STUDENT 1: Oh, the two fell down. [places one block onto bench with room between it and the stack of eight] I think the one goes that far.

EDUCATOR 1: So you thought the one goes this far?

STUDENT 1: Yeah.

EDUCATOR 1: Why do you think you have to put it all the way over here?

[Text on screen]: What are you noticing about the interconnectedness of math strands?

STUDENT 1: Because it was right here before.

EDUCATOR 1: So, are you kind of estimating how much space you'll need here?

STUDENT 1: Yeah. [moves stack of two blocks to bench] I'm trying to find out how much space I need.

EDUCATOR 1: Trying to find out how much space you need.

[Background Discussion]

STUDENT 1: [moves stack of three] The three is hard.

STUDENT 2: Mrs. [inaudible] [hands educator 1 a drawing].

EDUCATOR 1: Oh. Do you want to sit down with me? So, what did you notice about the geranium?

STUDENT 2: It had green leaves and it had pink on it and red [inaudible], and this is green and these are green.

STUDENT 3: Mark in there, and there was dug up holes, like an X in the middle.

EDUCATOR 1: Really? See, I had lilies disappear at night, but I have a theory about who took the lilies.

STUDENT 3: Yeah, but.

EDUCATOR 1: There's a certain animal in town that seems to be eating flowers from gardens. Ask your friends.

STUDENT 2: Animals dug up my garden and then put it in my other front yard.

STUDENT 1: Three.

EDUCATOR 1: Why don't you ask if this has happened to anyone?

STUDENT 3: And there was, and there was.

STUDENT 1: Seven.

STUDENT 3: There was an X in the middle, and there was dug up holes all around it.

STUDENT 1: Eight.

EDUCATOR 1: Kiana, would you like to make a survey to ask your friends if they've ever lost flowers in the night?

STUDENT 1: Six.

EDUCATOR 1: Yeah? Let's go find you a clipboard.

STUDENT 1: Eight.

STUDENT 3: And it looks like a whole pyramid coming up of holes, that looks like a dug up hole.

EDUCATOR 1: Oh. We're going to find out if this as happened to other people.

STUDENT 1: [holding up a label with the number 9 on it] Is this six or nine?

EDUCATOR 1: Count for me.

STUDENT 1: One, two, three, four, five, six, seven, eight, nine. I used the nine to do the six.

EDUCATOR 1: Oh, you used a nine to do the six? OK. Why do people get six and nine mixed up?

STUDENT 1: Because they can go the same ways.

EDUCATOR 1: So, you found that out. You might need to look for a six now.

STUDENT 2: I dig holes where my pool was, but now I had an animal pool and then like my [inaudible] in it, and [inaudible].