

Description: Clip 3 of 10, Unifix Cube Towers 4-tall, selecting from two colors, as a model for selecting three, four or zero objects from a group of four Parent Tape: Early Algebra Ideas About Binomial Expansion, Stephanie's Interview Five of Seven Date: 1996-03-13 Location: Harding Elementary School Researcher: Professor Carolyn Maher	Transcriber(s): Aboelnaga, Eman Verifier(s): Yedman, Madeline Date Transcribed: Fall 2010 Page: 1 of 3
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Time	Line	Speaker	Transcript
0:00	1	R1	Okay, what am I going to ask you next?
	2	Stephanie	3 red, I guess?
	3	R1	How about that?
	4	Stephanie	Ok, um, do you want me to draw it out, like, here?
	5	R1	You can do it any way you want.
	6	Stephanie	Okay.
	7	R1	Write- Actually, start using the notation, so that you can be using some of the new notation.
	8	Stephanie	[writes for about a minute] I don't know [pause] um, and that's it?
	9	R1	What do you think?
	10	Stephanie	Well, I can't do any more like this. And I can only separate them like- there's not enough space to separate them, like, into threes.
	11	R1	So you think you have them all?
	12	Stephanie	I don't know, I guess. Um. [pause] Yeah.
	13	R1	Okay, how can you convince me that you have them all?
	14	Stephanie	All right, well, here they're not separated by any, so there's only two ways you can do that. There's not enough space, to, like, move them again.
	15	R1	Okay.
	16	Stephanie	And here, they're separated by one, so you have one standing by itself over here and then two over here with a space in between, and then you switch it. But like, you can't.
	17	R1	Can- can you draw me a picture to show me this case because you talked about it, but you didn't draw me a picture because it was so obvious to you.
	18	Stephanie	What? The one with the one red? [draws]
	19	R1	Yeah. [Pause as Stephanie draws] Right?
	20	Stephanie	Mm-hmm.
	21	R1	And what goes in these other ones?

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	22	Stephanie	Yellow.
	23	R1	Yellow, and what goes in these other ones?
	24	Stephanie	Yellow.
	25	R1	Is there any relation between these two?
	26	Stephanie	I don't know. I mean, they're using red and yellow and there's – oh – they both have four combinations.
	27	R1	Right. That's true.
	28	Stephanie	And, I don't know, they both, I don't know. <i>[laughs]</i>
	29	R1	Ok let's do a little geometry since you're going to be doing geometry next. Let's- let's try to imagine that these are really the unifix cubes and these are the reds and that's the yellow and just- you know what I'm saying?
	30	Stephanie	Yes.
	31	R1	Can I take this one-
	32	Stephanie	Mm-hmm.
	33	R1	-and flip it like that?
	34	Stephanie	Yeah but you'd get that one.
	35	R1	Hm.
	36	Stephanie	Right? If you were to flip it over?
	37	R1	Could I take this one and move it down here?
	38	Stephanie	If you wanted to, I guess. It wouldn't make a- I mean-just like, take it, and instead of having it up here, having it down here? <i>[moves row of four to the bottom of that series of cases to create a symmetrical pattern]</i>
	39	R1	See, I'm not so sure that these two are different. If I can take this and flip it, is it really different?
	40	Stephanie	Well, but you can do it here too though.
	41	R1	It's true. It's easier with the towers when you know what's the top and what's the bottom. Isn't it?
	42	Stephanie	Yeah.
	43	R1	You have a point <i>[pauses]</i> . Hmm. That's interesting. So, let's see, somehow, when I take this one and move it to the bottom.

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	44	Stephanie	Mm-hmm. Like you want me to put it here?
	45	R1	Yeah, just move it for a minute. Right. That's easier for me to see all possibilities. I don't have to work as hard in my head.
	46	Stephanie	Oh, you mean, 'cause it like- like that? [<i>outlines how the reds form a symmetrical pattern along a diagonal</i>]
	47	R1	Yeah, right. 'Cause like-
	48	Stephanie	Oh, okay.
	49	R1	You see what I'm saying?
	50	Stephanie	Yes.
	51	R1	So you can take this and move it. It's true. As towers, you can't flip them.
	52	Stephanie	Mm-hmm.
	53	R1	But theoretically, that's what makes this a little bit different. That's why towers are nice, they have a chimney. Remember that?
	54	Stephanie	Yes, that's how they fit.
	55	R1	Alright. So we have four here.
	56	Stephanie	Mm-hmm.
	57	R1	And so we have- do we have all cases?
	58	Stephanie	Yeah, we have four, four...
	59	R1	Exactly one. Exactly two. Exactly three. Exactly four.
	60	Stephanie	Yeah.
	61	R1	Exactly none.
	62	Stephanie	None?
	63	R1	Exactly no reds.
	64	Stephanie	Oh.
	65	R1	Can you make one with exactly no reds?
	66	Stephanie	Yeah. You can make one with exactly no reds.
	67	R1	Okay, so why don't you write that down?
5:03	68	Stephanie	That would be zero, on the bottom I guess?