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| Description: Clip 2 of 10: Unifix Cube Towers 4-tall, selecting from two colors, as a model for selecting two 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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| | 1 | R1 | Let's just focus on red for awhile. So, if I'm selecting all red, four red, from my cubes, right- |
| | 2 | Stephanie | Mm-hmm. |
| | 3 | R1 | - my pile which has yellow and red, I can do that in one way. If I'm selecting one red, I could do that in four ways. Shall we continue? |
| | 4 | Stephanie | Ok. |
| | 5 | R1 | Suppose I was selecting two reds? |
| | 6 | Stephanie | We could do it, um, two ways. Right? No. |
| | 7 | R1 | Well here, why don't you- |
| | 8 | Stephanie | Wait... |
| | 9 | R1 | -play with it? I wish we had the cubes, but you can play with it any way you want. Doesn't this look a little bit familiar? We did stuff like this, didn't we? |
| | 10 | Stephanie | You could do it three ways. No, you could do it a lot. |
| | 11 | R1 | Well think about it a little bit. I wish we had chips or cubes. |
| | 12 | Stephanie | You could do red, red. [<i>draws diagram of possible arrangements</i>] You could do red, red. You could do red, red. [<i>pauses, continues drawing</i>] And that's it. |
| | 13 | R1 | Okay, show me what you did. |
| | 14 | Stephanie | Red, red, like, two reds. Two reds. They're all just two reds. |
| | 15 | R1 | So that's two reds. You put them this way here and you put them another way here. What's the difference? |
| | 16 | Stephanie | Oh, well, I just separated them. Here, they were together and here they're not. But they're still two reds. |
| | 17 | R1 | And so these are all the ways they can be together and these are all possible ways they can be separated? |
| | 18 | Stephanie | Yes. |
| | 19 | R1 | And you're sure of that? |
| | 20 | Stephanie | Yes. |
| | 21 | R1 | You're saying there are five ways? Now, I can see that these |

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| | | | are the only ways they could be together, but I'm not convinced that those are the only ways you can separate them. |
| | 22 | Stephanie | Oh, well, oh! [<i>draws more</i>] |
| | 23 | R1 | What did you forget? |
| | 24 | Stephanie | I forgot that one. |
| | 25 | R1 | Now, your strategy, it seems to me, is here you separated them by one and you forgot the case of separating them by two. |
| | 26 | Stephanie | Yeah. |
| | 27 | R1 | Right? |
| | 28 | Stephanie | Mm-hmm. |
| | 29 | R1 | So you separated them by none and how do you know you can't do any more of that, that you can separate by none? |
| | 30 | Stephanie | Because I filled up all the spaces. |
| | 31 | R1 | Okay, and how do you know that there are no more that you can separate by one? Because you filled up all the spaces. |
| | 32 | Stephanie | Yeah. Ok. |
| | 33 | R1 | How do you know that there are no more you can separate by two? Now what about separate by three? |
| | 34 | Stephanie | Because there's not enough space. |
| | 35 | R1 | Okay, do you see what I'm saying? Now you're sure. It's not like trial and error anymore. You've accounted for all possible ways of separating and there's nothing else possible. You've really thought that out. Okay? |
| | 36 | Stephanie | Mm-hmm. |
| | 37 | R1 | So what did you come up with? Why don't you start writing this? So, if you're selecting two red from all of these cubes. |
| | 38 | Stephanie | There's six. |
| | 39 | R1 | Right? |
| | 40 | Stephanie | Mm-hmm. |
| | 41 | R1 | Okay, what am I going to ask you next? |
| | 42 | Stephanie | 3 red, I guess? |

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| | 43 | R1 | How about that? |
| 3:01 | 44 | Stephanie | Ok |