# Session One
## Conceptualizing and Representing Linear Relationships

### Transcript
*Growing Dots 1 Lesson, Period 4: James and Matt*

[3 minutes]

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| **22:29** | **Kirk:** | Very good. We have two people that are saying 401 and we still have a group that is at 400. |
| **22:35** | **Kirk:** | We need to come to some resolution here. |
| **22:37** | **Kirk:** | You guys sticking with your 400? |
| **22:39** | **James:** | I'm still sticking with mine, because that plus one, it just doesn't make sense to me. |
| **22:44** | **Kirk:** | Now . . . |
| **22:45** | **James:** | You start with one. And you're gonna, if I'm starting with one and I'm supposed to find out what's the sequence after a minute . . . |
| **22:55** | **James:** | Then how are you gonna add, how am I gonna add five? |
| **22:55** | **Kirk:** | Right. I understand what you are saying. |
| **22:58** | **Kirk:** | Can I write your equation as, um, just so we don't get confused with some of the others that are saying that $x$ in this problem and actually in this problem here stands for minutes. |
| **23:11** | **Kirk:** | You are saying previous picture, I believe. |
| **23:14** | **James:** | Yeah. Like previous number, as in the first dot. |

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| **23:18** | **Kirk:** | But . . . OK, now let's just take that. The previous picture in this problem here would be one. |
| **23:23** | **James:** | Um-hm. |
| **23:24** | **Kirk:** | Plus four . . . |
| **23:26** | **James:** | Is five. |
| **23:26** | **Kirk:** | Gives you five. The previous picture here would be five plus . . . |
| **23:30** | **James:** | Four gives you nine. |
| **23:31** | **Kirk:** | Gives you nine. |
| **23:32** | **Kirk:** | So, what would be the previous picture to 100? |
| **23:36** | **Kirk:** | How would you? |
| **23:37** | **James:** | Previous picture to 100? |
| **23:38** | **Kirk:** | I mean, do you know how many dots are in the 99th one? |
| **23:41** | **James:** | That'd probably be what? . . . minus . . . wouldn't you just subtract four? |
| **23:45** | **Kirk:** | I'm just trying to see how you got 400 from adding four. |
| **23:50** | **James:** | Oh! Because . . . um . . . |
| **23:54** | **James:** | Whatchamacallit, she said multiply 10 by . . . or 100 by four because it was four you know, we were adding four, that's how . . . |
| **24:01** | **Brandie:** | That's how we got 400. |
| **24:03** | **James:** | That's how we got 400, 'cause she said multiply ten, I mean 100 times four, 'cause four was what we were using. |
| **24:12** | **Kirk:** | Danielle, were you multiplying by four as well? I mean were you adding four in a sense as well? |
| **24:17** | **Danielle:** | Um. Yeah. |
| **24:20** | **Kirk:** | She was actually adding four. I don't know if you noticed her drawing, but, uh, she called them like the circle thingies. |

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| **24:27** | **Kirk:** | But, it looked like a circle. |
| **24:33** | **Kirk:** | But I think she was actually . . . |
| **24:36** | **Kirk:** | Weren't you? Correct me if I'm wrong. But weren't you saying that you were adding like . . . |
| **24:41** | **Students:** | (*Laughter*) |
| **24:41** | **Kirk:** | That's all right, I got another one, no problem. |
| **24:43** | **Kirk:** | They make nice coasters I might add, too. |
| **24:47** | **Students:** | (*Laughter*) |
| **24:47** | **Kirk:** | Were you saying that it's like there were four and then there were two away, and three away, and so forth? |
| **24:53** | **Kirk:** | So, James, I would agree that you are adding four. |
| **24:57** | **Kirk:** | But she included the middle one. |
| **24:59** | **Kirk:** | Which I think you guys . . . |
| **25:01** | **Brandie:** | We didn't. |
| **25:01** | **Kirk:** | But if you did then we are all at 401. Yeah? |
| **25:05** | **Matt:** | James is like saying that if you have one quarter and then you give him four more, that you only have a dollar because you don't count the other quarter that you already had. |
| **25:15** | **Matt:** | Instead of a dollar twenty-five. I would count that quarter. But James would still have that much. |
| **25:22** | **Kirk:** | So, are we all on the same page now? |
| **25:27** | **Brandie:** | Yeah. We'll put the circle in. |
| **25:28** | **James:** | Just add the circle. Ha ha. |
| **25:28** | **Kirk:** | Okay, they are going to add the circle. Those are excellent illustrations of that. |