
Session Eight

Conceptualizing and Representing Linear Relationships

Transcript

*Growing Dots 1 Lesson, Period 4: Danielle's
and James' Methods*

[5½ minutes]

- 15:32 Kirk:** All right, can I get your attention for just a moment please? Um . . .
- 15:36 Kirk:** The first part of the question says describe the pattern. And we talked about, someone said it looks like an X pattern.
- 15:42 Kirk:** I've also heard people tossing around, you add four to each one, different things like that.
- 15:49 Kirk:** The second part of that question says, assuming the sequence continues how many dots are there at 100 minutes?
- 15:54 Kirk:** Can I get somebody to share with the class what they got for 100 minutes and how you arrived at your answer?
- 16:01 Kirk:** Danielle?
- 16:01 Danielle:** Four hundred and one.
- 16:02 Kirk:** Okay, she says 401. Anybody else agree with that?
- 16:05 James:** Agree?
- 16:07 Kirk:** Can you explain how you arrived at 401?
- 16:09 Danielle:** Because I got the equation x times four plus one. The plus one being the center, um, x being the dots around it or 100 and four being all the dots except the center.

-
- 16:21 **Kirk:** Okay. Can you illustrate that with that little diagram there?
- 16:29 **Kirk:** Actually it's a big diagram, it's not that little.
- 16:40 **Danielle:** This is the center or one in the equation.
- 16:44 **Danielle:** And, four would be all the dots except the center.
- 16:50 **Danielle:** It would be like these two and these two.
- 16:52 **Kirk:** Can you draw that on there?
- 16:54 **Kirk:** What you mean?
- 17:14 **Danielle:** And x is how many dots out from the center? Four ends.
- 17:21 **Danielle:** Like a circle. It's like a circle going around.
- 17:28 **Danielle:** Like that. And x would be this one and going out.
- 17:35 **Kirk:** Excellent.
- 17:37 **Kirk:** Give her a hand. Good explanation.
- 17:43 **Kirk:** Anybody else have four x plus one as their rule?
- 17:46 **Kirk:** Can I get somebody who maybe sees this a little bit differently? I like the way she explained that a lot.
- 17:51 **Kirk:** Anybody see it differently than, um . . . She's got these . . . you are calling them circles, right?
- 17:57 **Danielle:** Yeah.
- 17:57 **Kirk:** Could they kind of be squares?
- 17:59 **James:** I see it different.
- 18:10 **Danielle:** They could.
- 18:28 **Kirk:** Circles or squares. She sees it as growing out. Anybody see it a different way? OK.
- 18:05 **James:** I ain't gonna to draw it, I can just tell you.
- 18:07 **Kirk:** You are not going to draw it?
- 18:08 **James:** I'll just tell you I see it different cause I didn't think . . .

-
- 18:12 Kirk: Hold on.
- 18:13 James: Think that, I didn't think . . .
- 18:13 Kirk: Then I won't be able to use these neat things.
- 18:17 James: Well, I don't have to go up there, there's no reason.
- 18:19 Kirk: There's no reason to come up here?
- 18:21 James: No, I can just tell you.
- 18:23 James: 'Cause I could be wrong. That's bad on my part.
- 18:26 Kirk: So what if you're wrong?
- 18:27 James: No, it ain't like that.
- 18:28 Kirk: Big deal.
- 18:30 Kirk: I'm missing a dot. Do you mind, Danielle? No offense.
- 18:37 Kirk: Um . . . Are you willing to come up?
- 18:39 S: No.
- 18:40 Kirk: You don't want to come up either?
- 18:42 James: I'll tell you.
- 18:42 Kirk: Just draw. Come on, James.
- 18:48 Kirk: Yours might even be different than his.
- 18:49 James: I was thinking this.
- 18:53 James: This right here, I wasn't worried about this in the center. I didn't really think of that as one. I was thinking like . . .
- 19:02 James: This says like the sequence or whatever. Well, this started at one and over here is five and nine over here. I just took they added four every time.
- 19:10 James: See like four, four, four. And that's why I got x plus four for the equation.
- 19:19 Kirk: So your equation is x plus four. It's not what Danielle had.
- 19:22 Brandie: No.

-
- 19:23 Kirk: Hm.
- 19:24 Kirk: And it worked? The x plus four worked for you?
- 19:27 Kirk: Did you get 401 dots? Or did you get a different number?
- 19:29 James: Four hundred dots.
- 19:30 Kirk: You got 400. Okay.
- 19:33 James: 'Cause she counted the center, we didn't count the center like she did.
- 19:36 Kirk: Okay, and why didn't you count the center?
- 19:38 Kirk: Just . . .
- 19:39 James: Well . . .
- 19:41 Brandie: 'Cause the center is not growing, its just what's growing around it.
- 19:44 James: It wasn't, I think it wasn't part of it. If you count the center, then that's saying that this is adding five. I can't say is adding four to make this.
- 19:52 James: 'Cause if you start one and you get five over here, one plus four is five.
- 19:57 Kirk: Uh-huh.
- 19:58 James: Right?
- 19:58 Kirk: Uh-huh.
- 19:59 James: So, I didn't count this middle one.
- 20:20 Kirk: OK. Is the middle one part of the picture, though?
- 20:02 James: Yes.
- 20:03 Kirk: So, technically if you did it your way, it might be worth going back and adding the middle one since it's part of the picture.
- 20:10 Brandie: But the middle one is never changing.
- 20:11 Kirk: One other thing I want to . . . OK, thank you, James. Uh, one other thing I want to comment on, this x plus four.

-
- 20:20 Kirk:** I am curious about this because at one minute, what would x be in your equation?
- 20:27 James:** To me? x ? Like the number, the number that I'm adding it to, like what was in the previous picture. What I'm adding to.
- 20:34 Kirk:** Oh. OK. So you're saying that in the previous one, the previous picture . . .
- 20:37 Brandie:** Would be x .
- 20:38 James:** The previous one would be x . And then that plus four is the next picture.
- 20:47 Kirk:** I see. I thought you meant x was minutes. 'Cause in Danielle's problem, correct me if I'm wrong, Danielle, for your problem, could have I replaced x with a t ?
- 20:59 Kirk:** Were you saying that this was the number of minutes?
- 21:04 Danielle:** Um . . .
- 21:04 Kirk:** In your equation. Or am I wrong?
- 21:05 Danielle:** Yes.
- 21:08 Janelle:** You're wrong.
- 21:08 Kirk:** OK, Danielle was saying it was the number of minutes? Now James is saying his is the previous plus four.