Description: Early Algebra Ideas Involving Two Variables: Clip 5 of 18, Recap of Day 1, Moving from one to two variables **Parent Tape: Early Algebra Ideas Involving Two Variables** **Date: 1993-10-01** **Location: Harding Elementary School** **Researcher: Robert B. Davis**	**Transcriber(s): Spang, Kathleen** **Verifier(s): Yedman, Madeline** **Date Transcribed: Fall 2010** **Page: 1 of 3**

RBD	Um, okay, now there was really a sort of neat thing that happened last time… oh what were we working on? Remember, we were doing equations that were box times box minus something times box plus something equals zero. What were we taught to do? Do you remember what you were trying to find some numbers what did those numbers do?
Michelle I	The numbers replaced like the empty boxes or triangles.
RBD	And they made a true statement didn't they… when you did it… said it was equal to zero and that was true. Okay, and we did quite a few of those and you got to be quite good at that I think. And various people found the secret and I guess by now everybody knows what it and we didn't quite agree whether it's was one or two secrets, most people say it's two, but I think some people here like you persuaded us it's one. Um, what's the secret to that?
Milin	It's one big secret.
RBD	It's one big secret? Matt.
Matt	That the… the two multiple… the two num the numbers have to like when you add them up it has to equal… it has to equal the number to the, to the left and be multiples of the number to the right.
RBD	Well you might not really mean multiples, when you multiply them…
Matt	Yeah, be able to multiply them…
RBD	Yeah, yeah right when you multiply them they give you the number on the right and that's certainly right. Okay and I think that everybody was good at that. And then we started working on, well maybe before I leave that… uh those two equations on the bottom came up because uh, uh, Milin actually proposed one of them and then somebody proposed the other one. Jeff, what was special about them.
Jeff	Cause, there were two prime numbers in it so it was like impossible…
Student	No.
Jeff	…or you had to go into decimals or whatever.

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RBD	OK, we left that hanging a little bit and I think I'm going to leave it hanging again today, but it's a very interesting problem and it certainly looks like it might be impossible doesn't it? And we might have to use some other kinds of numbers or something. OK... um now then we started working on the sort of thing that's on the top up there. Um, we started with that equation box times two plus one equals triangle. Right, and what did we do then, Stephanie what did we do?
Stephanie	Well, we had to put a number in the box and a number in the triangle so that the equation was true.
RBD	Exactly what we were doing, and when we did that if we put zero in that box what number did we put in the triangle?
Stephanie	One.
RBD	One. And we made that table there, right. Okay, and now then we, in fact actually um Michelle where…yeah um I'm sorry … Michelle R. Uh, you remember what you wrote on your paper.
Michelle R	No.
RBD	You want to take it and maybe write it here so that everybody can see it. Here, just stand there. Well a couple of them anyhow. [Michele goes to write on the board]
RBD	Well, you suppose you can get it if you wrote small do you suppose you could get it up by the table the way you did it on your paper?
Michelle R	Up here?
RBD	Yeah, cause that was sort of neat the way you did that.
RBD	[Michelle R writes on board (□ ×2 + 1=Δ] And you left out one parenthesis; do you see where you left it out?
Michelle R	Oh. [Michelle R closes the parenthesis (□ ×2) + 1=Δ and places a zero in the box and one in the triangle.] Should I do more?
RBD	Well that's probably enough, but she went down and did that, and you agree that that's what we were doing?
Student	Yeah.
RBD	Now, what did we do then? We, then we turned the problem around and did something different. Michael what'd we do then? Michelle?

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Michelle I.	We tried to find a secret to it with a pattern like how the numbers…
RBD	Okay, and some of you did find a very interesting secret and it might be an appropriate one to share, um no, Ankur says that we shouldn't do that.
Jeff	Yes we should.
RBD	Well, okay, well we won't we won't do it just now we will sooner or later. We will sooner or later okay, uh, but we started, we started turning the problem around didn't we and for the other problems I gave you the table. Here, here I gave you the equation and we made the table, right, but now in the other problems, I gave you the table and what are you supposed to do?
Romina	Find the equation.
RBD	Yeah, find the equation. Uh, and now for the second problem, let me pass this back to you.