Description: Early Algebra Ideas Involving One Variable: Clip 3 of 11, Introducing Quadratic Equations and Solving Equation One **Parent Tape: Early Algebra Ideas Involving One Variable** **Date: 1993-09-30** **Location: Harding Elementary School** **Researcher: Robert B. Davis**	**Transcriber(s): Spang, Kathleen** **Verifier(s): Yedman, Madeline** **Date Transcribed: Fall 2010** **Page: 1 of 4**

Time	Speaker	Transcription
	Davis	Now I want to look at something like this. Okay, thank you very much. [Off camera: Davis writes (□ x □) □ (5 x □) + 6 = 0] and I will tell you that there will be more than one number that might work here, [Off camera: Davis writes { }] but remember that whatever number you put in the first box, what do you have to do ?
	Jeff	Put it in the rest of them.
	Davis	Put the same number in all of the other boxes, that is exactly right. Hum, we had some paper around here somewhere and I am not sure what has happened to it. I have some here. Yeah. Good.
	Jeff	Oh I got it! Oh I got it!
	Bobby	Oh, I got it.
	Davis	You know already! What?
	Jeff	Six times six.
	Davis	Okay, hum, let's get the paper passed out and let's try that.
	Michelle I	That's not true.
	Jeff	Yes it is. Six times six is thirty-six minus five times six is thirty.
	Brian	No, it's impossible that's wrong.
	Milin	Yeah that's right. That's one of the ways.
	Student	I told you.
	Jeff	Oh shut up.
	Michelle I	It doesn't work.
	Stephanie	Why don't you pass the paper down?
	Davis	So what do we know about six? I want to keep track of the numbers that don't work and I want to keep track of the numbers that do. Which list does six go in? Does work or doesn't work?
	Jeff	Six doesn't work so just kick me in the head.
	Brian	There are two different numbers Jeff. Two different numbers.
	Davis	Doesn't work. Right? Okay. Here is a list of the numbers that don't work. [Off camera: Davis writes a frown face

	and 6 is written under it.] Six doesn't work, okay.
Jeff	No two. A couple different can go.
Brian	No [inaudible]
Jeff	No. Doesn't it have to be all one number have to be in every box.
Davis	Yes, the same number has to be [inaudible]
Jeff	But there is two different possible answers though.
Michelle I	I think I got it. I think I got it but I'm not sure but I think I got it.
Davis	Michelle?
Michelle I	Two.
Davis	Two.
Milin	Yeah.
Davis	Is that right? Two. Everybody agrees with that?
Jeff	Oh, I don't want it to be right.
Davis	Can somebody come and show that? Matt can you show that.
Matt	I have a different number. I think it might work with three.
Davis	You have a different number? Okay, don't say it. Okay. Hum, Ankur can you come and see whether the two really works. [Off camera: Ankur writes a 2 in each of the boxes $\left(\boxed{2}x\boxed{2}\right)-\left(5x\boxed{2}\right)+6=0$] Yeah, okay and
Milin	Yeah. Two and three work that works.
Davis	And so this starts out by being what? It starts out by being four minus ten [Off camera: Davis writes $4-10=$]. Let's just do that much first. How much is that?
Milin	Negative six.
Davis	But that's not the whole thing. The whole thing really says four minus ten plus six. How much is that? [Off camera: Davis writes $4-10+6$]
Milin	Plus the six would be zero.
Michelle I	Zero.
Student	Zero.
Michelle I	Yes. Thank You.
Davis	And so when I say that's equal [Off camera: Davis writes $4-10+6=0$] to zero is that true or false?

Milin	Yeah. True. That was three.
Davis	True, isn't it? Okay, so how about two? Do I put the two here or here.
Jeff	No three wouldn't work.
Milin	In the brackets.
Michelle I	[Inaudible]
Davis	Or here [Off camera: referring to the truth set notation $\{\ \}$ or under the frown face he drew on the board] It goes in the truth set that makes it true. [Off camera: Davis writes $\{2, \_\}$]
Milin	Let's try three now.
Student	Three.
Davis	Now various people are saying three
Jeff	Three is not going to work.
Davis	You say three, you say three [inaudible], it works.
Stephanie	It is. It works.
Milin	Three is going to work.
Michelle I	I'm just thinking, don't [inaudible]
Student	No. It works. It works.
Davis	Okay I put three in that box. I have to put three in all the boxes [Off camera: Davis writes 3's in the boxes $\left(\boxed{3}x\boxed{3}\right)-\left(5x\boxed{3}\right)+6=0$] true? So it says [Off camera: Davis writes $9-15=$] nine minus fifteen, how much is that?
Milin	Negative six.
Davis	That is negative six [Off camera: Davis writes $9-15=\ ^{-}6$] but we are not through then it says plus six [Off camera: Davis writes $9-15+6$] how much is that?
Milin	Zero.
Davis	Okay, so when we say that's equal to zero up there [Davis writes $9-15+6=0$], is it true or false?
Milin	It's true.
Davis	Okay well, I've got some of these that I made up that I am wondering if I can get any of them cause they're so hard that none of you can do them.

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Jeff	How about if we make something and have it like be impossible?
Davis	Not even Michelle, not anybody, not Ankur not Milin no one not anybody. [Off camera: Davis is passing out papers]
Jeff	Like ninety times ninety minus three hundred sixty minus forty-two plus eighteen equals nine.
Milin	If it's impossible, forget it. The first one is easy. It's right up there.
Student	Do we write both of them?
Davis	Okay. What? Yeah. Would you, yeah write both of the numbers, would you? Yeah, put both of the numbers in. Instead of putting them in the boxes which is going to get messy, why don't you make the brackets notation [Off camera: Davis points to{}] and so the first one is certainly 2 and 3. Isn't it.? Okay.
Milin	Should we go onto the next one?
Davis	You may as well.
Jeff	Didn't we do this one already?
Davis	Yeah talk with one another about it if you want to but it doesn't sound to me like you probably need to. [Off camera: Davis sits down.]