

<b>Description: Early Algebra Ideas Involving One Variable: Clip 11 of 11, Are there Impossible Equations?</b> <b>Parent Tape: Early Algebra Ideas Involving One Variable</b> <b>Date: 1993-09-30</b> <b>Location: Harding Elementary School</b> <b>Researcher: Robert B. Davis</b>	<b>Transcriber(s): Spang, Kathleen</b> <b>Verifier(s): Yedman, Madeline</b> <b>Date Transcribed: Fall 2010</b> <b>Page: 1 of 6</b>
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Davis            Okay do you think I can make a problem that is so hard that even Ankur and Brian and Amy Lynn can't do it.

Michelle I        Yes. I think there is somewhere in the world a problem like that. Maybe not here but somewhere in the world.

Ankur             Every single one.

AmyLynn         But do you have it right now.

Michael          Why should we try one that nobody could understand?

Milin             Hey, there might be one that nobody can do.

Stephanie        If you write it in like Japanese or something and then.

Milin             What if that number was, hum?

Stephanie        Oh, unless of course the two numbers don't have the same kind of multiples.

Ankur             Right here. The problem right here.

Milin             What, ten? Yeah, this one would work you know, that one would work. We can do that but I know one that we cannot do.

Brian             Okay, I know that.

Student          Uh oh!

Brian             No wait, I don't.

Bobby            I know.

Student          Ten, ten.

Davis             Bobby?

Bobby            Five.

Stephanie        Okay.

Davis             Did anyone figure it out?

Bobby            Six.

Michael          Wait. Hold on.

Bobby            Seven.

Romina           [To Brian] Give me your pen.

Brian             Wait. Wait. Wait. Wait. Uh, twelve, twelve, fourteen, fourteen and six.

Ankur            Twelve and eight.

AmyLynn         Twelve and eight.

Ankur            I win, I win, I win.

Davis            You win. I lose. He did it.

Brian            I beat you. I got it before you Ankur.

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Ankur No, I got it before you.

Stephanie No, I got it before you too. I just didn't know it until you guys said it.

Ankur I waited till everyone is quiet.

Michael I know but I didn't want to spoil your chance.

Davis There is one other thing I'd like to do if we had time.

Student What?

Jeff You can keep us from gym, please.

Michael Keep us from gym.

Jeff I don't have my gym clothes and I'm going to get a zero for not being, I'm unprepared.

Davis It might be a good idea. Somebody say the secret again to make sure we all agree on what it is.

Jeff Oh, I know. I know. Because like if you add the two numbers together you'll get the first number [Davis points to 200]. Yeah, so it would be like ten plus ten or whatever it is and then if you multiply the two numbers together, you'll get ninety-six, am I right?

Student Yes. 2:09

Davis Okay. Can we try, can we try another kind of problem? Okay.

Jeff Can you keep us from gym?

Milin Can I give one of the problems that can stump somebody?

Stephanie Yeah.

Milin Can I give just one of those problems that could stump everybody, please? [Davis off camera: Well, uh okay. Alright you want to write it. You want to write it. Davis gives Milin the chalk.]

Stephanie What was the time I was born?

Ankur Yours doesn't make sense Milin. Yours doesn't make sense.

Jeff You tell him Ankur.

Stephanie I know a problem.

Brian No, yours is probably like one million times four million two hundred sixty three thousand nineteen.

Stephanie I bet you don't know.

Milin [Off camera Milin wrote: ( x ) – and then Milin stopped

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writing] I made a mistake. I made a mistake.

Ankur You can't have two prime numbers.

Brian Mil, it don't make sense. Mil it can't make sense.

Milin It makes sense but I copied it

Jeff Yeah that makes a lot of sense right there

AmyLynn: You have to put in numbers that will make sense.

Ankur Nineteen and seventeen are two prime numbers.

Michael You could do a one and nineteen.

Jeff I bet you, no one knows Matt's original [inaudible].

Stephanie Okay Milin you figure it out.

Brian Let's see Mil. [Off camera: Milin continues to write  $(x) - (19x) + 17 = 0$ ]

Stephanie You made the problem.

Milin I'm stumped.

Davis Well, but you know what, you know what? He says nobody here can do it.

Jeff Neither can you Mil so what are you talking about? If you think about it.

Davis Now, suppose this secret is right. What would be the numbers that might work?

Student One.

Davis One might work.

Brian The only numbers that can work are one and seventeen.

Davis Because we are looking for divisors of this right? [Off camera: Davis points to something in the problem.]

Stephanie The seventeen is lower than the nineteen.

Davis And one certainly divides seventeen and what other number might work?

Brian One and seventeen.

Davis Seventeen, so all we got to do is try one and seventeen and see what happens. What happens when you try those?

Jeff I can do one. I'll do one.

Davis You try one and you've got one minus nineteen. How much is that?

Brian If that nineteen was an eighteen, if that nineteen was an eighteen, it would have worked.

Stephanie It would have worked.

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Davis Yeah, one minus nineteen is negative eighteen, right?  
 Brian If nineteen was eighteen, it would have worked.  
 Davis And so I have seventeen so it's not zero. So, one doesn't work. Seventeen is a little hard. I can't multiply seventeen by itself [inaudible].  
 Students [Talking but inaudible].  
 Davis Can somebody think of a way to multiply seventeen by seventeen?  
 Jeff Dur. Why can't Milin go up and show us the answers and prove that he doesn't know what it is and that he is wrong.  
 Stephanie Milin, prove how come it doesn't work?  
 Milin Maybe if you use decimals.  
 Jeff You think he is so cool to use decimals. I don't even want to try it.  
 Stephanie If you are positive that it doesn't work, prove it to me.  
 Brian Oh my God!  
 AmyLynn: This is the first time Milin doesn't know an answer.  
 Stephanie Oh my God! And his calculator doesn't either.  
 Davis But now wait. But now wait. There is a sense in which he does know the answer because,  
 Michael He made it up.  
 Davis Because what did he say he was going to do?  
 Michael He makes an answer up and he has no idea. He makes a problem up and he doesn't know the answer.  
 Davis He was going to make up a problem that didn't have an answer is what he said.  
 Jeff Sure, I could do that too.  
 Stephanie Milin, explain to us why it doesn't have an answer.  
 Milin Well, it does have an answer but it's not a whole number.  
 Stephanie No, well you made up the problem and how come it doesn't work.  
 Brian See, he just said it doesn't have an answer but it's not a whole number.  
 Stephanie But how come it doesn't work?  
 Jeff He thinks he is all funny now.  
 Davis Yeah, how about that? Brian says maybe it has an answer but it's not a whole number.

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Ankur That's what I said. It may be a decimal.

Stephanie Then how come it doesn't work with whole numbers.

Jeff There we go.

Stephanie You created the problem then tell us why it doesn't work.

Student I know why. I know why it doesn't work.

Michael Prime numbers.

Student Yeah, you tell us.

Michael I know how to make it a true statement with whole numbers. Please.

Brian Show us the answer.

Ankur I can tell you why that doesn't work.

Davis Yeah, can we get it. Can we get it quiet here? I can't hear I can't hear what Michael is saying.

Ankur I can tell you why that doesn't work.

Stephanie I don't want to hear you say it. Yeah I know.

Jeff I have another one that can stump everyone. I just switched the numbers.

Matt I think I know why it doesn't work?

Stephanie Why? No don't say it. I want him to tell me.

Davis Jeff, how about yours?

Jeff It's just switching the numbers.

Student Oh, I got one.

Jeff That would be two boxes, box times box, seventeen.  
[Off camera: Davis wrote  $(x) - (17 \times \square) + 19 = 0$ ]

Stephanie I want Milin to explain it to me.

Jeff Milin doesn't know the answers and his calculator on his stupid watch doesn't work either now.

Ankur You know why it doesn't work? You want to hear why it doesn't work.

Jeff Because it is impossible and Milin's watch can't save him this time.

Stephanie No. No. No. I want to hear Milin explain it.

Matt I know why it doesn't work? I think it's because there's two prime numbers instead of.

Jeff Because Milin's calculator ran out of batteries.

Student You didn't know what you are talking about.

Milin Yes I did.

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Ankur            So why didn't you tell?

Stephanie       So why didn't you explain it to us?

Milin            Because everybody was yelling in my ear.

Stephanie       Well, you could have got up and said okay here is why it doesn't work.

Davis            Okay. Okay. Can I make a suggestion? I'd like to leave this question for another time.

Student           No.

Jeff              Oh, don't leave us please.