

<b>Description: Additive vs Multiplicative Reasoning</b> <b>Parent Tape: What is one half?</b> <b>Date: 1993-09-21</b> <b>Location: Colts Neck Elementary School</b> <b>Researcher: Professor Carolyn Maher</b>	<b>Transcriber(s): Yankelewitz, Dina</b> <b>Verifier(s): Reid, Adrienne, Farhat, Marcelle</b> <b>Date Transcribed: Spring 2009</b> <b>Page: 1 of 3</b>
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Line	Speaker	Transcript
1	T/R 2	Alright. Let's try something a little different now. Ok. Now, if we call the orange "two", what can we say about yellow? Think about it for a minute, and you want to talk to you partner?
2	Meredith	You're using all the yellows.
3		[Kimberly raises her hand. She has built a model of two yellow rods under the orange rod. Sarah raises her hand. Meredith returns to her desk]
4	Sarah	I have them. I only have two! [Meredith goes to back of room.]
5	Meredith	Oh! She called orange two. One half? Two? Then this would have to be one.
6	T/R 2	[Class called together by T/R 2] Ok. I'm anxious to hear some answers to this, hear what people have come up with. I hear, I hear a couple of different things here and I think that's something- let's see if we can get some answers up here and discuss them. Uh, let's see. Who haven't we heard from? Let's see. Brian, what do you think, now when we call this, we give this the number name two, the orange, what number name are we going to give to yellow?
7	Brian	One.
8	T/R 2	Why one? You want to come up here. You can come up here and show us. [Brian goes to overhead.]
9	Brian	You would put two yellows together and it would be the same size as that, and even if and that's like having, so if this [orange rod], is considered a two. Then those two [yellow rods] would be considered like a regular orange, so it would be considered a one.
10	T/R 2	Okay, so you'd consider each of these [yellow rods] a one, is that what you're saying?
11	Brian	No, that like together they would equal the same as that [orange] so it would be a one.
12	T/R 2	Ok. So the number name you're giving yellow then was what?
13	Brian	One, one.
14	T/R 2	Okay, alright, one. What do you think about that? Does anyone want to come—Who agrees with that, that you give the yellow the number name one? Ok. Does anyone disagree with that? I heard, I heard some--
15	Erik	I have another name. You can call it another name.
16	T/R 2	Okay, what would you call it Erik?
17	Erik	Well, see, do you have to call the orange two?
18	T/R 2	Well, I've arbitrarily picked that I'm calling the orange two.
19	Erik	Well you could call it one, and if you call it one, then two yellows would be a half. If that would be considered, if the orange would be considered two, then you'd call those [yellow rods] one. But if you can call it [orange] one, you could call those [yellows] halves.
20	T/R 2	That's interesting, what if I call the orange... uh
21	Brian	[At overhead.] There might be other ways. You can split them, you can maybe split it into thirds, and call that a one but we don't have enough thirds--

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22		T/R 2	Okay, yeah, you probably could... Let me ask you another question then, I'm going to ask this to everybody, too. What if I change the name of the orange to six. What would I call the yellow-what number name would I call the yellow? Let's see, uh, somebody I haven't had a chance to talk with, James is your hand up? Kimberly?
23		Kimberly	Five.
24		T/R 2	Five. That's interesting. Can you come up and tell us about that? [Kim goes to the overhead.]
25		Kimberly	Look here [pointing to Brian's model] before you said that [ the orange rod] would equal two, and then Brian said that [yellow rod] would equal once. So now you're saying that that [orange rod] equals six, so I figured that if that equaled one before [yellow rod] it would equal five now. [F – Sarah has built a model on her desk 36:10]
26		T/R 2	That's interesting. What do you think about that, some of these other folks? Did you all hear Kimberly's argument here? She's saying when you call this one, the number name two, the orange, that the yellows are each one, okay, they had the number name of one. She's saying, so if I call this six now, she'd call that five. What do you think? [Meredith and others shake their heads negatively.] Okay, I see some people are shaking their heads and I want to hear why. Uh, let's see. Alan?
27		Alan	[Goes to the overhead.] You said that the orange was six. And before you said that this was two and this [yellow rod] was one. So now if you're calling [orange rod] six, and have of six would be three. So that's...
28		T/R 2	Okay. SO we have another argument. What do you all think about Alan's argument? He's calling this [yellow rod] three, the number name three when I call this [orange rod] the number name six? Meredith?
29		Student	Yeah.
30		Meredith	[Inaudible.]
31		T/R 2	You agree with that? Jessica?
32		Jessica	I agree with him because like half of six is three so that would
33		T/R 1	I'm curious how Kimberly thought of five? Can you help me understand why you think five?
34		Kimberly	Well, before you said that was two, the orange was two, and the yellow was one. So now you're saying it's six, so the yellow could be five.
35		T/R 1	The yellow is five... That's where I'm confused. You're saying if this [yellow rod] is five and this [yellow rod] is five, this [orange rod] is six?
36		Kimberly	Okay, I made a mistake, I --
37		T/R 1	You didn't mean that? What did you mean, Kimberly?
38		Kimberly	Well, I made the mistake. I figured it out now.
39		T/R 1	Tell me what you were thinking. I'm curious what you were thinking.
40		T/R 2	That's what I want to know
41		Kimberly	I made the mistake thinking from before, I forgot that adding

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			one and one is two, but five and five isn't six, so, I made that mistake.
42		T/R 1	If you want this to be five, what would you have to call the orange?
43		Kimberly	Ten.
44		T/R 1	You'd have to call orange ten. Do you agree with that? [students: Yeah.] What a class! You're going to have trouble stumping them, Dr. Martino.
45		T/R 2	I know, this is tough!