

Description: Alan's Infinity Parent Tape: Fractions and the Number Line Date: 1993-11-03 Location: Colts Neck Elementary School Researcher: Professor Carolyn Maher	Transcriber(s): Yankelewitz, Dina Verifier(s): Yedman, Madeline Date Transcribed: Spring 2009 Page: 1 of 4
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1		Alan	You could divide that, you could divide from zero to one it's the smallest of fractions. It's easy to imagine you could divide it into zillionths.
2		Maier	Did you hear what Alan said Eric? Did you hear what Alan said? Do you want to say that one more time Alan?
3		Alan	You could divide it into zillionths and there would still be space in there.
4		Eric	You could divide it to zillionths depending on what number inaudible
5		Michael	But if you made a number line to show zillionths you'd have to have the longest number line in the world.
6		Eric	That doesn't make sense even if you...the only way you can divide it in zillionths is depending on how big your one whole is. If your one whole is ten you cant divide it into zillionths
7		Alan	Well from zero to one you could
8		Eric	If one were tenths, how could you divide it into zillionths?
9			<i>break in tape</i>
10		Eric	Like I was saying before about the zillionths you could have a line the size of a dust particle and you could put that on there a zillionth times
11		Michael	If you had a pin that was smaller than a dust particle then
12		Eric	I know something that is smaller than a dust particle, a dust bug. 100 dust bugs could fit in a dust particle.
13		Maier	Andrew

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14		Andrew	Well if you made a number line and you...if you made a number line and you took a magnifying glass or a microscope and put your number line under it. You would see that you have a lot more room left to put the 100 th 1,000 th and the 100,000,000 th
15			<i>break in tape</i>
16		Eric	What I don't understand is, if you're using a microscope to give more space in actual reality you're not getting more space.
17		Maher	Yeah that's an interesting idea Eric
18		Eric	You see when you're using a microscope it looks like you're getting more space but in actual reality you're not getting anymore. It just looks like you are.
19		Andrew	Well actually you are because the human eye can't...
20		Alan	Right, when you enlarge it you can see how much space you have left between the zillionth and the zero.
21		Eric	Yeah, Alan but what you were saying before, you were saying that if you use a microscope you get more space on that number line.
22		Alan	No that's not what I'm saying
23		Eric	You were saying that before
24			<i>break in tape</i>
25		Students	(agreeing with each other about using billionths and trillionths.)

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26		David	Well I think that, that you can't really see it too well but if you use a microscope then you're seeing it closer it looks like you're seeing more. But you're really not, you're just looking closer.
27			<i>break in tape</i>
28		Maher	Okay we're going to give number names for all of those little lines, wouldn't that be fun?
29		Students	(laugh)
30		Alan	like this could be the size of the bar, then there can be your line now if you had the hundreds which would probably go somewhere in here, it would look say if it was right here. And then you would have all that space in there. It looks like it, but you really don't have that much space. That's just if you had it really big, that's how much space it would look like you see. So that means you could divide this into halves and thirds and fourths and fifths and all of that.
31		Maher	So you're telling me, let me see if I understand this. The rest of you will you help me with this? You're telling me that this bar over here that is marking zero right? Okay Michael is making it over there, but this bar that's marking zero you've magnified because you've used a very powerful microscope. And so if you're telling me now it would be really hard to place 100 but it may look like...its so close to zero you can't even mark it once you've magnified it you have all this extra space in between. That's interesting.
32		Alan	Yeah cause it looks like you have a lot of space but you really only have that tinsy winsy little space between there. I mean you could take a really small pen and you could divide this up into all of these pieces. If you look at that with your regular eye you couldn't see that so you'd have to make it bigger.

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