

Description: Division of Fractions: How Many One Twelfths are in One? Parent Tape: Introducing Division of Fractions (classroom, side, and presentation view) Date: 1993-12-02 Location: Colts Neck Elementary School Researcher: Professor Carolyn Maher	Transcriber(s): Yankelewitz, Dina Verifier(s): Lew, Kristen Date Transcribed: Spring 2009 Page: 1 of 5
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Line	Time	Speaker	Transcript
1	0:00	T/R 2	Ok I want you to think about this train. [T/R 2: puts a red and orange train on the overhead.] Can everybody take out the rods and make this train with the red and the orange rod? We've spent a lot of time thinking about this train, haven't we? We've spent a lot of time building models using this train. Now in the way of review, can anybody tell me if I give this train the number name 1? Ok I'm going to call that train 1. What number name would I give to one of the little white rods? [She puts a white rod below the red and orange train.] And if you think you know, can you build me the model to show me so that you can explain it to us? Remember the red and orange have the number name 1 and I want to know what number name you might give to the white that would make sense. [Approx. 1 min. given to class as children raise their hands when ready.] I'm hearing some interesting things, and I don't think we need to dwell on this one. I think a lot of people really are anxious to tell me how this works. Is there somebody who feels they can explain how this works? They built a model and they can explain how this works and what number name they gave for white. Ok let's see. Danielle.
2		Danielle	I would call it $1/12$.
3	02:10	T/R 2	She would call it $1/12$ she says. How many people agree with that? [Several students in view raise their hands.] This looks pretty encouraging. You can put your hands down.

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			1/12 you're saying, does anyone disagree first of all with 1/12? No, nobody does. Maybe I should have asked that first. Ok, Danielle, why do you think 1/12?
4		Danielle	Because the red and the orange that's the whole and 12 white ones make up the whole.
5		T/R 2	Ok. So if we call red and orange 1, we're calling it the number name 1, you're saying that it takes 12 of those little white ones to equal up to the length of the orange and the red? [Danielle nods]. And so you would give this the name 1/12? [Danielle nods]. Do you agree with that? Does that seem reasonable? Ok well now what we can do is maybe we can answer a question or two about this train. [T/R 2: writes two questions on the overhead. The first is, "How many <u>whites</u> are in a <u>red orange</u> train?" and the second question is, "How many _____ are in _____?" - Now this is what we've been answering right? How many white are in the red and orange train? Can we now replace these color names, for the train and for the white, with number names in that sentence? Can we change the color names of white and the train with red and orange to number names at this point now? Can we rewrite this with numbers in that sentence? A couple people are saying that they can. I would like you all to think about for a minute, maybe even to discuss it with your partner what you might call these. Danielle has told us part of this; you just have to put it into the sentence now.
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7		CT	Read me, read me what it says there.
8		Danielle	How many whites are in a red and orange train?
9		CT	Well, you said...
10		Danielle	Uh, twelve
11		CT	Ok, twelve, go ahead. How many
12		Danielle	How many blank are in
13		CT	What would you call one of these [white rods]
14		Danielle	A twelfth
15		CT	Ok. So how many blanks are in... You said how many twelfths are in
16		Danielle	A whole?
17		CT	Are in one, right, you have it!
18		Danielle	I do?
19		CT	Ok, say it again. Read the second line
20		Danielle	How many twelfths are in a whole?
21		CT	Are in one? Aren't you calling this one? [Danielle nods] Ok, wait, maybe I'm wrong, what did you say?
22		Brian	How many twelfths are in one?
23		CT	Do you agree with her? [Brian nods] That's what you said.
24		T/R 2	I think we're ready to talk about this one, ok? I've heard some very nice thinking on this. All we're doing is substituting in number names for these color names at this point. Now that I've defined what an orange and a red is, I've said that it was 1. Right, I'm calling orange and red train 1. Can somebody tell me what number names I can put in here to make the same sentence? It's just putting in number names now. I've heard some people tell me this already. Who feels confident that they could tell me

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			what we're going to call these and how we're going to say this sentence? Ok, let's see, I haven't had a chance to... David.
25	05:52	David	The white would be $\frac{1}{12}$ and the red and orange train would be 1 whole.
26		T/R 2	Ok. So I could say maybe $\frac{1}{12}$'s or something like that. How many $\frac{1}{12}$'s are in one [whole (David adds)]. I'm just going to call it the number 1. Alright so we could rewrite this as this right? [T/R 2: fills in the blanks in the second question so that it says, "How many $\frac{1}{12}$'s are in 1?"] We could rewrite it with numbers. Can anybody answer that question now? A couple people already did when they were talking about it they answered it for me, but I'd like you to think about that for a minute. You can talk to your partner again if you'd like. They question is how many $\frac{1}{12}$'s are in 1? [Approx. 1 min. given to class as children; raise their hands when ready.] No tricks here. There really are no tricks here. This is something I want you all to be clear on though before we move on. Ok? I know that you know this. Ok, let's see, I don't see any hands over here ladies. Do you think you could answer this question? Think about it ok. If you have an idea, raise your hand. Ok. Let me hear from Graham.
27	07:23	Graham	There is 12 twelfths.
28		T/R 2	Ok. So then you're telling me that how many $\frac{1}{12}$'s are in 1 is 12.
29		Graham	Yeah.
30		T/R 2	Ok. Alright, so Graham's answered the question by saying that there are 12 of them there. Do you agree with that? If you agree

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			with that, raise you hand. Ok, that's great. Now Erik, did you have something that you wanted to add?
31		Erik	For that equation, well, you could put how many $1/12$'s there are in 1, you can also put how many $1/12$'s are there in $12/12$'s.
32		T/R 2	Oh ok. So I could also rewrite this you're saying then as 12 over 12.
33		Erik	Yeah.
34		T/R 2	Is that the same thing 1 and 12 over 12? Are they the same thing?
35		Erik	Yes.
36		T/R 2	Ok, Erik says that 1 and 12 over 12 represent the same number or the same amount. What do you think about that? Do you agree with that? Are they equal to each other? If you have an idea about that, raise your hand.
37		Jessica	What did he say about $1/12$?
38		T/R 2	He said that the number 1 and 12 over 12 or $12/12$'s, he said those are really the same thing. Do you agree with that? Jackie says yes that she agrees with that. David, do you agree with that? Mark, do you agree with that? Laura? Ok. We have some agreement here. Ok, that's very interesting. Thank you Erik for adding that.