

Description: Clip 2 of 5: David and Meredith compare one half and two thirds Parent Tape: Discovering equivalent fractions and introducing fraction notation Date: 1993-10-04 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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- 7.0.115 T/R 1: I'm wondering which is bigger, one half or two thirds. [pauses] Now before you model it you might think in your head, before you begin to model it what you is bigger and if so, if one is bigger, by how much. Why don't you work with your partner and see what you can do.
- 7.0.117 [David builds a model with one orange, two yellow, and a purple]
- 7.0.118 David: Try the purples. Get three purples. It doesn't work, try the greens
- 7.0.119 Meredith: What was it? Two thirds?
- 7.0.120 David: It would be like brown or something like that.
- 7.0.121 Meredith: Ok
- 7.0.122 David: We're not doing the one third, we're doing two thirds. That is one third
- 7.0.123 Meredith: First we've got to find out what a third of it is. What's a third of an orange?
- 7.0.124 David: One third? [He places two green rods instead of the purple rod]
- 7.0.125 Meredith: What's third of an orange? Let's start a different model. [She begins to make a different model] The green. The green, half of it is the light green [David places a third light green rod next to the original two]
- 7.0.126 David: [Demolishes his original model and begins to build the same as Meredith] Alright, yeah, I was thinking of that way before
- 7.0.127 Meredith: And you can take the take the red, and the light green, and put it up to it [Meredith has a model of one dark green rod, two light green rods, and three red rods], it's, she asked, is one half bigger than, what did she ask? What did she ask?
- 7.0.128 David: She asked, which is bigger, one half or two thirds?
- 7.0.129 Meredith: One half or two thirds? Now take six of the ones [she takes six white rods]
- 7.0.130 David: Yeah, I know, and put 'em up to there, and that would be one sixth. Hey, wait a minute, hey wait, maybe that's it, yeah it's bigger by one sixth
- 7.0.131 T/R 1: [To Beth and Sarah] What do you think? Which is bigger?
- 7.0.132 Beth: One half [Beth's model is the same as Meredith's]
- 7.0.133 David: I think one half is...
- 7.0.144 T/R 1: Yes, David and Meredith? What do you have?
- 7.0.145 Meredith and David: Well
- 7.0.146 David: we think
- 7.0.147 Meredith: two thirds
- 7.0.148 Meredith and David: is bigger than
- 7.0.149 T/R 1: You both agree?
- 7.0.150 Meredith: one half by one sixth. Cause if you put six ones up to a whole

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- 7.0.151 David: dark green
- 7.0.152 Meredith: If you put it up to a whole
- 7.0.153 T/R 1: I'm sorry, what's the number name for dark green
- 7.0.154 David and Meredith: One
- 7.0.155 T/R 1: Ok.
- 7.0.156 Meredith: And you put six ones up to the dark green
- 7.0.157 T/R 1: Hold on, I'm a little confused. Tell me again. Six ones? You called this [dark green] one? What are you calling these [white]?
- 7.0.158 Meredith: One sixth
- 7.0.159 T/R 1: One sixth.
- 7.0.160 David: And then these, this would be
- 7.0.161 Meredith: We're calling them each sixths,
- 7.0.162 T/R 1: Ok
- 7.0.163 Meredith: So there's six sixths
- 7.0.164 David: This would be [red] one third, and this [light green] is one half of dark green, and then it would be bigger by one sixth, because
- 7.0.165 T/R 1: Do you both agree with that?
- 7.0.166 Meredith: Yeah, mm hmm.
- 7.0.167 T/R 1: Ok, could you write that up? Uh, let me get you some paper, I want you to write that up. And see if you can make me - if it works for other models because some students don't believe that it works for other models and I think you two believe that it works for other models
- 7.0.168 Meredith: Mmm hmm, yeah
- 7.0.169 T/R 1: So can you try to find some so that you can try to convince them that it should work for other models, and come up with a way of explaining it to the class, ok? That if it works, if you really believe it, that if it works for one it works for others, and then write this up, let me get you some paper.
- 7.0.185 Meredith: Seven, nine, ten, I need them. Go get another box. [Meredith finishes her second model]
- 7.0.186 T/R 2: [approaches Meredith and David] Ok I see you had your hands up over here?
- 7.0.187 Meredith: Yeah
- 7.0.188 T/R 2: Let me come around and see what you're doing.
- 7.0.189 Meredith: We found two answers
- 7.0.190 David: Well, I have three.
- 7.0.191 T/R 2: You have two solutions... three. Ok, let me hear about one of these models. Here, which one do you want to tell me about?
- 7.0.192 Meredith: That one. [Meredith refers to her model consisting of a train with one orange rod and one red rod which represents her unit. Beneath

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- the train she has 2 dark green rods; below, she has 3 purple rods; and again, below, she has 12 white rods]
- 7.0.193 T/R 2: Yeah, that's an interesting looking one, tell me about it.
- 7.0.194 Meredith: Now if you call this rod one...
- 7.0.195 T/R 2: The orange and red together?
- 7.0.196 Meredith: Yeah, and you take the two dark green rods, those are the halves... [She takes a dark green rod and a purple rod from her model and places the purple rod beneath the dark green.] And you take two thirds, and put it up to it, and you take... two sixths, it's bigger than two sixths. [She puts two white rods next to the dark green rod] And in this one, it you take this [Indicating a white rod]...
- 7.0.197 T/R 2: Can we go back to that one again?
- 7.0.198 Meredith: I mean it's bigger than one tenth, I mean twelfth, one twelfth, one twelfth. [She puts the white rods back to make a train of 12.]
- 7.0.199 T/R 2: How does that work? I'm confused about that. I'm confused about the little white rods, I am following you right up to that point.
- 7.0.200 Meredith: If you put the white rods up to here [She moves the orange and red train under the train of 12 white rods], there's twelve of them, and then you call them twelfths, because there are twelve of them.
- 7.0.201 T/R 2: All right, okay.
- 7.0.202 Meredith: And then you take the two thirds, and you take two twelfths, and then you put it up to the thirds [She moves two white rods over to her model representing two thirds and one half] and it is bigger by two tens... two twelfths.
- 7.0.203 T/R 2: By two twelfths, okay.
- 7.0.204 Meredith: If you use this model... [Meredith refers to the original model in which 1 dark green rod represent her unit. Beneath them, she placed 3 red rods, then 6 white rods, and then one dark green rod.]
- 7.0.205 T/R 2: Uh hmm.
- 7.0.206 Meredith: And if you use this model [referring to the 1 dark green rod as unit model]
- 7.0.207 T/R 2: Uh hmm.
- 7.0.208 Meredith: [Meredith then removes 1 light green rod and 2 red rods from her original model] And you call these [white rods] sixths, and you put this one [white rod] up to it [light green rod] and it is bigger than one sixth. [Meredith, with her original model, has indicated that the difference between one half -length of 1 light green rod- and two thirds -length of a train of two red rods- is one sixth -the length of a white rod]
- 7.0.209 T/R 2: Okay, so here it was bigger by two twelfths and here it was bigger by one sixth.
- 7.0.210 Meredith: Yeah.

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- 7.0.211 T/R 2: That's interesting. Could we call the difference between the two thirds and the one half in this model [a train of orange and red as the unit] another number name besides two twelfths?
- 7.0.212 Meredith: Um, yeah, well, maybe...
- 7.0.213 T/R 2: You said two of those little white ones were two twelfths, right?
- 7.0.214 Meredith: [Meredith places 6 red rods below her larger model as she speaks] Yeah, and maybe since two of these little white ones equals up to one of these [She puts 1 red rod on top of 2 white rods in the train, showing that a red rod is the same length as a train of 2 white rods.] or it's one fifth, [she starts lining up red rods against her original model] oh, I mean one sixth, the reds [Figure S-35-22].
- 7.0.215 T/R 2: Oh, that's interesting, that's kind of interesting, then, so if you then used the reds to describe the difference, you could call this one sixth, the difference.
- 7.0.216 : Meredith: Uh hmm.
- 7.0.217 T/R 2: And over here [Meredith's second model with dark green as the unit.] one of the whites you say is one sixth?
- 7.0.218 Meredith: Yeah.
- 7.0.219 T/R 2: Oh, that's interesting, two different models. Okay.