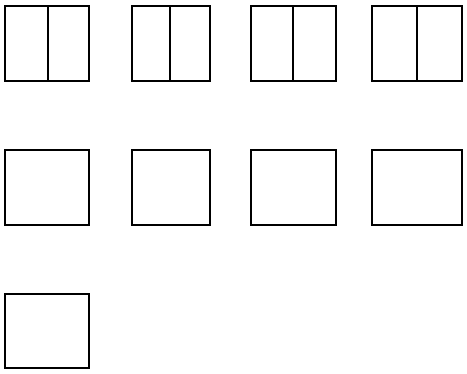
Two Classroom Dialogues : Excerpt 1

Excerpt 1: The Brownie Problem

Students in Ms. Carter's class were exploring the concept of equivalent fractions. The specific problem follows: *The problem:* I invited 8 people to a party (including me). My mother got home with 9 brownies. How much did each person get if everyone got a fair share?

Sarah: The first four, we cut them in half. [Jasmine divides squares in half on an overhead transparency. See figure below.]



Ms. Carter: Now as you explain, could you explain why you did it in half?

Sarah: Because when you put it in half it becomes ... eight halves.

Ms. Carter: Eight halves. What does that mean if there are eight halves?

Sarah: Each person gets half

Ms. Carter: Okay, that each person gets a half. [Jasmine labels halves 1-8 for each of the eight people.]

Sarah: Then there were five boxes [brownies] left. We put them in eighths.

Ms. Carter: Okay, so they divided them into eighths. Could you tell us why you chose eighths?

Sarah: It's easiest. Because then everyone will get ... each person will get a half and [whispers to Jasmine] How many eighths?

Jasmine: [Quietly to Sarah] 5/8.

Ms. Carter: I didn't know why you did it in eighths. That's the reason. I just wanted to know why you chose eighths.

Jasmine: We did eighths because then if we did eighths, each person would get each eighth, I mean 1/8 out of each brownie.

Ms. Carter: Okay, 1/8 out of each brownie. Can you just, you don't have to number, but just show us what you mean by that? I heard the words, but ... [Jasmine shades in 1/8 of each of the five brownies not divided in half.]

Jasmine: Person one would get this ... [Points to one eighth.]

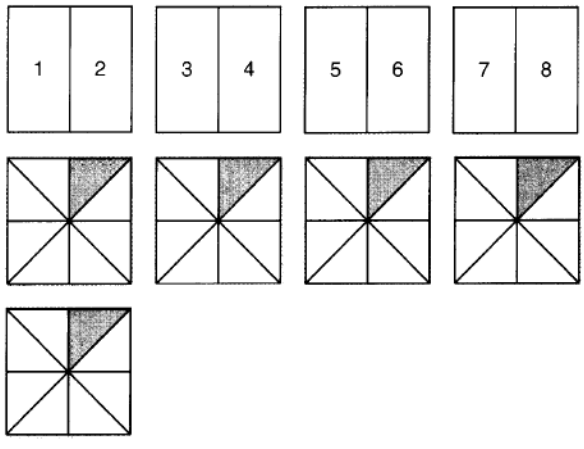
Ms. Carter: Oh, out of each brownie.

Sarah: Out of each brownie, one person will get 1/8.

Ms. Carter: 1/8. Okay. So how much then did they get if they got their fair share?

Jasmine/Sarah: They got a 1/2 and 5/8.

Ms. Carter: Do you want to write that down at the top, so I can see what you did? [Jasmine writes ½ + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 at the top of the overhead projector.



The dialogue continues…

From Kazemi, E. (1998). Discourse that promotes conceptual understanding. *Teaching Children Mathematics, 4*(7), 410-414.

Two Classroom Dialogues : Excerpt 2

Excerpt 2: Fractions and Factors (from Truxaw, 2004)

Ms. Reardon is reviewing for a test with her seventh grade class.

Ms. Reardon:	We're asked to rewrite 12 twenty-firsts in simple form. What do they mean? Don't give me an answer yet. But what do they mean by rewriting in simple form?
Steven:	Turn it into the lowest fraction possible that equals the 12 twenty-firsts.
Ms. Reardon:	Right. So, what is really getting smaller, not the fraction, but the…?
Class:	Number
Ms. Reardon:	The numbers themselves. I'm going to do something on a sidetrack for the moment. Can you guys list the factors of 12 for me? *[T. writes on board as she speaks]*. Factors of 12. Give me one pair. Lucas.
Lucas:	1 and 12
Ms. Reardon:	1 and 12. And I like to list them as pairs. I find it easier, so I don't leave anything out. *[Lists on board]*
Sheila:	6 and 2
Ms. Reardon:	6 and 2 *[Lists on board.]*
Roberto:	3 and 4
Ms. Reardon:	*[T. lists on board]*. Any others? *[pauses for 5 seconds]*.
Ms. Reardon:	Do you guys agree with this?
Class:	Yeah.
Ms. Reardon:	Any more?
Class:	No.
Ms. Reardon:	I'd like you to do the same thing for 21.
Student:	1 & 21 *[almost inaudible]*
Ms. Reardon:	Uu- uh *[indicating for S to stop speaking]*… thank you. Hands… Garth.
Garth:	3 and 7
Ms. Reardon:	Okay *[writes on board]*
Joseph:	Um, 1 and 21
Ms. Reardon:	1 and 21. Okay. Any others? *[pauses]*

The verbal exchanges continue similarly, finding the common factors of 21. Then…

Ms. Reardon:	Now I want to know…common factors…hmmm…what do I mean by common? Amanda?
Amanda:	You see them more than once.
Ms. Reardon	Yes. We have it once here and once here. I'm going to circle and then write it over here *[as a separate list]*. Somebody tell me one number that appears in both lists.
Taylor:	One.
Ms. Reardon:	Breanna?
Breanna:	Three
Ms. Reardon:	*[pauses, circling the common factors]* No more?
Class:	*[No response.]*
Ms. Reardon:	Good. Okay. Put the extra comma in, in here. Now, I want the greatest…common factor *[writes on board]* Sometimes abbreviated GCF. Greatest common factor. Everybody!

The dialogue continues…

From Truxaw, M. P., & DeFranco, T. C. (2008). Mapping mathematics classroom discourse and its implications for models of teaching. *Journal for Research in Mathematics Education*, *39*, 489-525.