**Investigating A Student’s Distributive Partitioning Scheme: The Case of Gabriel**

**Problems**

***Weight of Candy Bars Problem****.* Ming has five identical candy bars. Each bar weighs h ounces. Draw a picture of what 1/7 of all the candy bars look like? How much does 1/7 of all the candy weigh? Explain your drawing and your answer.

**Data Excerpts**

***Data Excerpt 1:*** Gabriel, Martin, and the teacher talk about *Weight of Candy Bars Problem.*

T: So, this one. Explain this to me again.

G: So, I have no idea [laugh].

T: So, this was 1/7 of 5h. Here is your 5h and…

G: Okay so 1/7 of 5h with. Did we think about it was equal to 5/7 of 1h?

M: Yeah.

T: So, how did you conclude that?

G: We kind of pull out 1/7 from each h. So H#2, H#3 and then.

T: Uh-huh.

G: Uhm. So and that is 5 of 1/7 from each h so that is 5/7…

M: Of 1/7 of 5h. 5/7 of 1h is 1/7 of 5h.

T: If you put this together you were saying you would have 5/7 compare to 1h, right. 5/7 of 1h okay. And that is the same as 1/7 of 5h. So uhm how do you know this is how would you justify that 1/7 when you put those five pieces together?

M: Well, we took out 1/7 from each.

G: Yeah so if we put them all together it will equal 5/7 of it would okay [laugh] So, if you set them all together these are they would line up you know 1,2,3,4,5. It will line up just like that.

T: Right, right. Definitely I agree with you.

**Gabriel and Martin’s JavaBars work for *Weight of Candy Bars Problem***



***Finding Weights of Multiple Cookie Dough Logs Problem.*** This morning the bakers have ten cookie dough logs. They want to find the weight of 1/13 of that amount. Draw a picture of what 1/13 of all the dough look like. How much does 1/13 of all the dough weigh? Explain your drawing and your answer. Most likely you’ll want to use JavaBars for this problem.

***Data Excerpt 2:*** Gabriel makes the connection between two problems.

T: So, it looks kind of similar to me because you are taking now you have 10ms, 10 weights and you are taking one of them make it into 13 parts right?

M: Yeah.

T: So now how could you justify [G said oh] you have to have 10/13 in each of those little pieces.

G: So we can like we can pull out this.

T: See if you can label something or write something down [she left].

***Data Excerpt 3:*** Gabriel explains their JavaBars picture for *Finding Weights of Multiple Cookie Dough Logs Problem.*

T: Okay, can you explain it to me, how did you get?

G: So first we tried to do first we lined up these two bars thirteenths and tenths. So this is 10m and this is 1/13 of all of 10m. So then we were trying to figure out how 1/13 related to 1m. So we lined it up and made put thirteenths in the smaller portions to see what equal 1m and eventually 10/13 equals 1/13 of 10m. So, 10/13 of 1m rather equals 1/13 of 10m. So then we ungrouped them just like we did in our on Tuesday and put them on to show that equals that [laugh].

**Gabriel and Martin’s work for *Finding Weights of Multiple Cookie Dough Logs Problem***

