INSTITUTE for LEARNING

Calling Plans

Teacher: Wobberson Torchon

District: Providence Public Schools

Grade: High School Algebra I

GROUP 1

Teacher: What's a goal you have in mind?

Student: Trying to find out what number of minutes would, um … is gonna, um, make plan A cheaper.

Teacher: How would I find that out?

Student: We have to choose it—any number. We have to choose any number for the minutes and—

Teacher: Okay. How would I do that?

Student: We'd have to time the minute—the number we're gonna choose, time that, then, uh, the cost that they give it to you.

Teacher: Okay. Why don't I have you write that down and then I'll come back to see exactly what you have?

RETURNS TO GROUP 1

Student: It is cheaper at 51. But on our table, it gets cheaper at 50, because we went by ten.

Teacher: So what happened if it was one back? Another number was gonna have a…take a bit of chance?

Student: If we went by 1, like 1, 2, 3, 4, then at 51 it would get cheaper.

GROUP 2

Teacher: So if I don't use the phone the month, so I don't have to pay?

Student: You have to pay $5.00. Zero makes …

Teacher: And your, your table seems to tell me that if I don't use it, there is no money. But yet you're telling me that if I don't use the phone—

Student: If you don't use the phone, it's…it costs you $5.00.

Teacher: Is he representing your table, then? How would you show that?

GROUP 3

Student: Just—no, all you need to do is just write it down, that it's first—

Teacher: What did you just say*?*

WHOLE GROUP DISCUSSION

Teacher: This is where each and every one of you has the opportunity to listen to the other ones thinking.

Student: But we did—we calculated and we see that the Plan B it was cheaper. Then we get up to 30, 40, 50, then we get a different answer for each one. Now we calculate and we say like there are 50 and 50—it's the same.

Student: We decided to go by tens for the numbers of minutes—instead of going by one and taking forever. And at first we kept getting that Plan A was more expensive than Plan B, but then when we got to 50 minutes they were both equal, and after 50 minutes Plan A started getting cheaper. And by the number that we went by, by tens, we found that 60 minutes was the place where Plan A was cheaper than Plan B, but that wasn't the first number that—where it got cheaper. So then we went to 51, the number after they both were equal, and then that was where Plan A started getting cheaper than Plan B. And then we made a graph showing where both the plans meet, and that's at $7.00, which is 50 minutes. *(This is the point in which the incorrect formulas may be seen going vertically on the chart. This appears to be the only chart with an attempt at writing a function).*

Teacher: Which point in the table did you find particularly interesting for the problem?

Student: When Plan A and Plan B came out to the same price.

Teacher: At which point are you direct me to—are you directing me to?

Student: 50. When it was 50 minutes, each plan was the same.

Teacher: I wonder if anybody can tell me where this point is represented on the graph. Can we see that on the graph?

Student: Yeah.

Student: Yes, sir.

Teacher: Okay. Then come up and show me. Who would like to come and show me where the point is on the graph?

Student: Me.

Teacher: And what is the significance of this point for the problem we were doing?

Student: That's the *xy*-intercept thing.

Teacher: That's the *xy*-intercept thing. Can you elaborate a bit so that I can see what it means?

Student: That's where the two plans are equal. That's the intercept.

Student: You can identify the intersection where they are both the same. In 50 minutes they will charge you $7.00 in Plan A. In Plan B, they would—is 50 minutes and they would charge you $7.00.

Student: Basically any time Plan—the line for Plan A is over Plan B, that's when Plan B is cheaper.

Teacher: Did we hear what he just said?

Student: Mm-hmm.

Teacher: Okay. So I'm gonna use this same reasoning and ask somebody to come and tell me when will they know that Plan B is more expensive, using the same line of reasoning if you hear it. Who would like to come and tell me by looking at the graph—when can they tell me Plan B is more expensive?

[End of Audio]

