ANTHONY ROGERS: All right, so I want your desktops cleared because we're going to start our Problem of the Month. This Problem of the Month is called "Party Time." On your tabletops there are manipulatives, pattern blocks -- you can use them as counters. So go ahead, why don't you just start looking at your manipulatives now. I know you don't like playing with them, but go ahead and look at them now.

All right, do you think you're ready to go ahead or you need to sit? Hmm? All right, let me see. Where? Okay.

Give you your sheets. Do not start, just keep looking at the manipulatives. Do not start the problem.

If you hear me, clap twice. All right, so go ahead and leave them alone for now. Let's look at your Problem of the Month. Make sure you're sharing with a neighbor, so you're working with a person who sits perpendicular to you. Right? So make sure both of you are reading your paper. Actually, Tonya and Wanisha, all three of you use the one sheet together, but keep the two sheets, but I want you to do your work on one sheet, okay? All right, so make sure you're sharing with a person who sits perpendicular to you and go through your reading. You going to read upside down?

All right, the name of this problem, what is it?

STUDENTS: Party Time.

ANTHONY ROGERS: Party Time. All right. Lab away. Cindy had a party, she invited ...

STUDENTS: Guests.

ANTHONY ROGERS: She invited ...

STUDENTS: Two guests.

ANTHONY ROGERS: Her guests each invited ...

STUDENTS: Four guests.

ANTHONY ROGERS: And then those guests each invited ...

STUDENTS: Three guests.

ANTHONY ROGERS: How many people were at Cindy's party? Explain, *explain*, how you determine your solution. So, when you write out your explanations, you can use numbers, what else?

STUDENT: Words.

ANTHONY ROGERS: Words, and pictures, is that right? All right, so I gave you those manipulatives so you can look at it, right, from a different perspective. Go ahead and get started. Make sure you work together and explain your reasoning.

STUDENT: [laughing]

STUDENT: Okay, two plus eight equals ten. Okay, first I got that because she invited two guests and her two guests invited each four guests so 4 plus 4 is 8, and then 2 plus 8 equals 10. And so those ten guests, they each invited three guests, so 2 times 3 is 30, 30 times 3 is -- I don't really know.

STUDENT: Thir-- no.

STUDENT: Wait.

STUDENT: 30 plus 10, hold on, wait.

STUDENT: Because 2 plus 8 is 10, and ten of her guests -- those ten people -- four of her guests --

STUDENT: 10 plus 3 equals --

STUDENT: Yeah, I got, I got 16. And then plus our 17.

STUDENT: Because she had two guests, each guest invited four, right. Each invited four, and then those four guests each in--

STUDENT: So this is Cindy, and she invited --

STUDENT: Each of them invited three.

STUDENT: Yeah, that's what I'm saying.

STUDENT: Dang, that's not 17 then.

STUDENT: Well no, because look, shouldn't we count [inaudible], she invited four and then she invited three, and shouldn't we go two more?

STUDENT: Um, no. Because she each, she invited two guests. Two of her guests invited four, and then all four -- okay, so there's eight guests that her first two guests invited. Each of them invited three, so that means each of them would invite three. So that means 3 times 8 plus something times something. Plus 3 times 8, plus 3. I think. And 3 times 8 equals 24, so it'd be 27? What? I don't get that.

STUDENT: I know.

STUDENT: So you've got to add those people, plus all of these people --

ANTHONY ROGERS: So you have two and two here. But can you also use the manipulatives to demonstrate that?

STUDENT: Uh-huh.

ANTHONY ROGERS: So can you show me, what are we representing.

STUDENT: Her guests each invited four guests so --

ANTHONY ROGERS: So that's Cindy. And then -- all right, and Cindy did what?

STUDENT: She invited four people so --

ANTHONY ROGERS: She invited -- how many guests did she invite first?

STUDENT: Two.

STUDENT: Two.

ANTHONY ROGERS: All right, so where are the -- those are the models of the two guests? Okay.

STUDENT: So like, it's, then these invited ten, that's one person, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

STUDENT: Another one that is invited and those four people invited three. And three, so.

ANTHONY ROGERS: Okay, and then --

STUDENT: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. And then those 10 guests --

ANTHONY ROGERS: Okay, so where's Cindy again? And she invited two guests. And then they did what?

STUDENT: Invited four guests.

ANTHONY ROGERS: And then did those four guests invite anyone?

STUDENTS: Yeah.

ANTHONY ROGERS: How many people did they invite?

STUDENT: 16, 17.

ANTHONY ROGERS: And so, work that out together.

STUDENT: Yeah, 1, 2, 3, 4, 5, 6, 7, 8, 9. Wait. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. Oh wait, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. Those -- 1, 2, 3; 1, 2, 3; 1, 2, 3 …

ANTHONY ROGERS: Okay, so let's look at your model here. Where's Cindy?

Invited how many guests?

STUDENTS: Two.

ANTHONY ROGERS: Okay, so those two people just came, right with Cindy. So Cindy invited how many?

STUDENTS: Two.

ANTHONY ROGERS: And then those two invited how many?

STUDENTS: Four.

STUDENT: Four each.

ANTHONY ROGERS: And then those four guests invited how many?

STUDENTS: Three.

ANTHONY ROGERS: All right, so talk about your model. I like what you have so far. Talk about it.

All right, so show what you have here. Where's Cindy again? And where are her two guests?

STUDENT: She had 35 guests. You don't count the circles here because those are already counted up here.

STUDENT: 35.

STUDENT: Yeah. So are we going to write on your paper or mine?

STUDENT: Yours.

STUDENT: Guests invited --

STUDENT: Three?

STUDENT: Four guests, and then each one of her guests invited three more guests. Do you wanna do that? Just do the same thing, just do three boxes on each point.

ANTHONY ROGERS: You know what, Taja, we could go about it mathematically with number sentences, so one thing is maybe you could write the mathematics here?

STUDENT: [inaudible]

STUDENT: Okay, she has 35.

STUDENT: What 35?

STUDENT: Yeah. It's 34 but when you add Cindy --

STUDENT: I know I added Cindy --

STUDENT: Yeah, that's 35.

STUDENT: I got 34.

STUDENT: I got 35.

STUDENT: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 ...

STUDENT: I counted that.

STUDENT: I got 32 -- wait, no. Oh yeah, you get 35.

STUDENT: Cindy -- so this is Cindy, and she invited two guests, and those two guests invited four guests each. And the four guests invited three people. And, um, so we counted these, since there's eight of them then we count by threes so that 8 times 3 equals 24. And then you counted these, and that gives you 11, and so it would be 24 plus 11, and that equals 35. So there was 35 guests at the party. So that's all we do, yeah.

STUDENT: And we go like -- how would you …?