1		R2	Matt, do you think you can turn around and come where, um Stephanie is sitting, and sit over there next to Stephanie? And why don't you move over here a little bit, Michelle, so there's room for everybody.
2		Stephanie	There are the parents and the parents have children, okay? They have four children. Where's the other two? Here Okay. And their children have kids. (Matt and Stephanie arrange towers one high and two high in groups. The yellow tower one high has yellow, yellow, and yellow, red towers two high next to it. The red tower one high has red, red, and red, yellow towers two high next to it.)
3		R2	Okay. Let's be sure that, I want to be sure that Bobby and Michelle know what you are doing and not convinced that they know what you're doing.
4		Stephanie	All right. All right, look.
5		R2	Michelle is saying she doesn't know what you are doing. And maybe, Michelle, you better sit where sitting so you can see better. Here. Can you see okay, dear? I don't want to block you.
6		Stephanie	Michelle, you start out with two, okay? All right? You're convinced, right? You're convinced this is really two?
7		Michelle R.	Um hm.

8		Stephanie	All right. Then we have There's... Then we have to move on to the next one, okay? Now for towers of two, there's only four. Are you convinced that there's only four?
9		R2	Why should she be convinced there are four?
10		Stephanie	Why are you convinced that there's only Oh, sorry. Why are you convinced that there is only four? (Michelle smiles, but doesn't answer.) Why are you convinced that there's only four?
11		Michelle R.	Because... (Michelle smiles, but says nothing more.)
12		Stephanie	Show me! I mean, here! Take the blocks and build! Think of anything!
13		R2	But, but, but I don't think that they're thinking of it. You've to show me and Michelle. You're the teacher now, you've got to show us, um... If you start with that yellow one...
14		Stephanie	Um hm. This. This?
15		R2	Yeah
16		Stephanie	Okay
17		R2	How can you build more?

18		Stephanie	All right. Okay.
19		R2	Don't worry about that other one…
20		Stephanie	All right. You have the yellow, right?
21		R2	Just that yellow one. How could you make another one if you're making two high?
22		Stephanie	All right. Well, there's no other way that you make one high with the color yellow. Are you convinced? Why are you convinced? (Stephanie is asking Michelle.)
23		Michelle R.	Because…
24		Stephanie	Why are you convinced? (Stephanie is asking Bobby.) Well, see, she's not going to let me go any further unless ...
25		R2	I'm going to let you go further. I want to know how you are going to get to two high
26		Stephanie	Okay. Once there's no more, there's absolutely, positively no more, you can't build any more with one. So you build the next number. And that number is two.
27		Matt	(unintelligible)
28		Stephanie	Okay? So you have four of two.
29		R2	That's a big jump for me, Stephanie. You're jumping too fast from four to two. I don't know how they change. I don't know how they group.

30		Stephanie	Oh, you mean. Okay. You have, you have these two, okay? Absolutely no more, okay?
31		Matt	So you have to build them up one in order to make two high.
32		Stephanie	You can't build them down one!
33		R2	We know you have to build them up, but how do you build them up to get four from two?
34		Stephanie	Come on! You can't go any further. There is no way. You can't go down to zero!
35		R2	We know that. We know that, Stephanie. don't know how you get from the two to the four.
36		Stephanie	There is no... Oh, you mean, four towers high? Or four…
37		R2	No, two high.
38		Matt	No. No. No. (Matt takes over the Unifix cubes.)
39		Stephanie	Hey!
40	42:54	Matt	All right. Now, from here, you did an opposite, an opposite, an opposite or the same color. So then you add the yellows or red on to the last one. So you have...
41		R2	What do you think of that, Michelle and Bobby?

42		Matt	So you have a red on the top. So you have a red on the bottom.
43		R2	What do you think of that, Bobby? Do you understand what he's saying?
44		Matt	Same as this. So you have the same red on the bottom. You add a red or a yellow on top. You have the same yellow on the bottom, but you add a red or a yellow on the top. Then you have.. .
45		R2	Is that all you can do?
46		Matt	That's it. And then ... Well, for this you have red, yellow, yellow, red, like that.
47		R2	Oh, what's he doing, Bobby? I think Bobby sees what you're doing. Do you see how he's making them grow?
48		Matt	This is red, yellow and red, red and I have two yellows and a red, two yellows, three yellows, red, yellow. Those two. Yellow and red, yellow and yellow and red, red. Two, four, six, eight ... (Matt has built eight towers three high, and arranged them in groups with the towers one high and two high that have bases of the same color,)
49		R2	What do you think, Michelle and Bobby? What do you think? You see how they grow? How would you make them grow if you...

50		Stephanie	Yes.
51		R2	wanted to continue to make them grow to four?
52		Stephanie	You add one on.
53		R2	How would you do the adding?
54		Stephanie	All right.
55		R2	I'm curious how you would make it. If I asked Bobby to explain it to the class later, I wonder what Bobby would say to the class.
56		Matt	Well you can...
57		R2	Let Stephanie say it, now
58		Stephanie	All right. Okay. You keep this one. You can add a yellow on.
59		R2	Don't destroy that one. You better start again, because once we lose it, then we forget what we had here.
60		Matt	Here, here ... there's another one, right there.

61		Stephanie	Oh cool. (unintelligible) Take it off.
62		Matt	Here, and you add yellow, red. You add a red one...
63		Stephanie	Or... And then you can have yellow, red, red, yellow,
64		Matt	And yellow, red, red, yellow,
65		R2	Or you add a yellow.
66		Matt	and yellow, red, red, yellow like that.
67		R2	Okay. So from that one you get two more.
68		Stephanie	And then from this one you can get yellow, red,
69		Matt	Yellow, red,
70		Stephanie	yellow, yellow. Or yellow, red, yellow, red. You can get both of them.
71	47:01	R2	Well, if you do this then, you should know how many if indeed this works, how many you should get with four, right? And then you should be able to check the chart and organize the chart. What do you think? You think you can do it? Maybe leave you go finish it and then make the chart.

			That's a way to check it, isn't it, Stephanie? That is one way to check it. There may be another way, but that's one way. You might think about the other ways. let you finish this and in a few minutes, let's share everything, okay?