Description: Making general sense of x times x Parent Tape: Early Algebra Ideas About Binomial Expansion, Stephanie's Interview One of Seven Date: 1995-11-08 Location: Harding Elementary School Researcher: Professor Carolyn Maher	Transcriber(s): Aboelnaga, Eman Verifier(s): Yedman, Madeline Date Transcribed: Fall 2010 Page: 1 of 2

1		R1	Did you ever have anything like this? *[Dr. Maher writes x · x.]*
2		Stephanie	*x* times *x*?
3		R1	We had *x* plus *x*. You told me that was two *x*'s. What about *x* times *x*?
4		Stephanie	I think I might've. I don't think I've done anything like this this year.
5		R1	Okay. What do – what do you think that means?
6		Stephanie	It means *x*, the variable *x*, *x* amount of times.
7		R1	Okay. That's that's interesting. The variable *x* *x* amount of times. Really neat. I'll buy that.
8		Stephanie	Um hm.
9		R1	Okay. Suppose you had numbers.
10		Stephanie	Okay.
11		R1	Um 'cause you said it could be anything. Suppose we had *x* and we had *x* dot *x*. Right? And if *x* were two…
12		Stephanie	It would be two times two.
13		R1	Two times two. Right?
14		Stephanie	Um hm.
15		R1	And if *x* were three –
16		Stephanie	Three times three.
17		R1	Is there another way two times two?
18		Stephanie	Um, you could write it two plus two?
19		R1	Okay. And three times three? Does that work the same way?
20		Stephanie	No.
21		R1	Is there a way of writing, you know –
22		Stephanie	everything the same?
23		R1	Write everything the same? Right. All the way up to …if you had four. This is four times four.
24		Stephanie	Oh! Well, you could use um you could use exponents.
25		R1	How would you do that?
26		Stephanie	Well. Two to the second and three to the second.
27		R1	Okay. So you could – why don't you write that?
28		Stephanie	Okay. Like do you want me to make another chart?
29		R1	Well – well –sure.
30		Stephanie	Okay.

31		R1	And then tell me how you would write x times x then. *[Stephanie writes.]*
32		Stephanie	How far do you want me to go?
33		R1	Um until you can give me a writing x times x in general.
34		Stephanie	Um. x to the x power?
35		R1	Okay.
36		Stephanie	Can you do it like that?
37		R1	Well. Check it out.
38		Stephanie	Or – x to the second! Oh no! x to the second power?
39		R1	What do you think? Which do you think it is? x to the x or x to the second?
40		Stephanie	x to the second.
41		R1	Why?
42		Stephanie	'cause x to the x power would mean – say x is – x is one thousand one hundred and fifteen. That would mean one thousand one hundred and fifteen one thousand one hundred and fifteen times and that's –
43		R1	Pretty big.
44		Stephanie	Really long.
45		R1	Okay.
46		Stephanie	So two x – uh – x to the second.
47		R1	Okay. Do you know how you read that?
48		Stephanie	What?
49		R1	Another way people read the x to the second power? Sometimes that's called x-squared.
50		Stephanie	Oh. Yeah
51		R1	You knew that. Okay. So is that familiar to you?
52		Stephanie	Yes.