

Description: Beginning to build a general rule Parent Tape: Early algebra, investigating linear functions, Series 6 of 7 Date: 2005-12-15 Location: Hubbard School Researcher: Professor Carolyn Maher	Transcriber(s): Baldev, Prashant Verifier(s): DeLeon, Christina Date Transcribed: Spring 2008 Page: 1 of 4
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- R3 Suppose then you had to explain somebody right, how they would find out how much money they spend if they go into the museum and spend by the number of items, let's say X amount of items and they come out and you want to tell them how they can figure out how much money they spend? What would you tell them?
- Ariel I would tell them that you could start off from one and add from what you have and come from ten and subtract or one hundred and subtract like that or you could do some multiplication
- R3 Well. But then ... uh, you are telling me a lots of ifs and ifs situation, I am so confused. All I know is I went to this museum. I am not telling you exactly how I bought us but I am telling you I bought x amount of items, right?
- Ariel [nods]
- R3 How do I compute the amount of money that I spend? Out of going in and out and buying X amount of items. Total how much money I spend?
- Ariel Oh, you went in and out, in and out, in and out ...
- R3 Oh no, I just went once ...
- Ariel OK.
- R3 [pointing to the paper] Here you are saying to me ... let us backtrack a little bit to that one. I went in and bought ten items, right?
- Ariel Yep.
- R3 And came out, so how much money did I spend?
- Ariel It is thirty-two dollars
- R3 How did you compute that?
- Ariel Because ten items is thirty dollars plus two equals thirty two because two is the entrance fee.
- R3 So if I say I bought let's say, fifteen items?
- Ariel Eh, fifteen?
- R3 I bought fifteen items
- Ariel Fifteen items?
- R3 Yes.
- Ariel Then I would do half of these. [pointing with his pen to the paper]
- R3 [pointing to the paper] Let's do it.
- Ariel [writing] Ten is thirty and half of this is five, so fifteen. Five items fifteen dollars.
- R3 No, no, no, I bought fifteen items.
- Ariel Oh, fifteen items.

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R3 [laughingly] That's what I said.

Ariel That would be forty five dollars.

R3 How did you figure that out?

Ariel This is fifteen, this is forty five. Ah, ah, I am smart.

R3 How did you do it? I mean you are just doing things I am having hard time following how I am going to find out how much money I spend. How I would compute that? You are saying you spend how much?

Ariel Forty-five dollars.

R3 How would you know? How did you do that?

Ariel You spend forty-seven dollars.

R3 Forty-seven dollars?

Ariel Yep.

R3 Forty-five or forty-seven?

Ariel Forty-five plus two, the entrance fee.

R3 So what are we ... We are kind of like ... pretty much ...

Ariel Generate

R3 Ah, what did you say?

Ariel Generate

R3 Can we, Ah. Ah.

Ariel [tapping his pen on the paper and mumbling]

Ariel [pointing on the paper] So, for one item is three, ten items is thirty.

R3 So can we ... for one is three, right?

Ariel No, it is five dollars. Yeah, yeah, if you ...

R3 No, five dollars, because you are saying you have to go in and out, right?

Ariel Yeah.

R3 So, one is five, right?

Ariel Yeah.

R3 Two? Oh, no, no, what is that? [pointing to paper in which Ariel is writing] For ten you say?

Ariel Yeah, thirty two.

R3 And for fifteen?

Ariel Eh?

R3 Fifteen.

Ariel Fifteen, it would be forty-five.

R3 Forty-five, so ...

Ariel No, forty-seven, forty-seven.

R3 So let me call the number of items what I buy as X, right?

Ariel [nods]

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- R3 X could be ten, could be fifteen, could be whatever, right?
- Ariel [nods]
- R3 And let me call the number of ... the amount of money that I am going to spend as A.
So how I am going to compute that? The amount of money?
- Ariel There are twenty-six letters in an alphabet.
- R3 Hmm, hmm. [smiles]
- Ariel X Y Z it would be twenty-four.
- R3 [pointing to the paper] Can we put this, we saw what is the rule here? So there is a rule, do you think there is a rule going on?
- Ariel Times ten. That is what I am doing.
- R3 [pointing to the paper] So let's see what is our rule here? How do we represent the total amount? If X is the amount of the number of items that you buy and A is the amount of money that you supposedly spend total, how will you compute that A?
- Ariel As three ... no, no, yes, three.
- R3 What is that three? Three what?
- Ariel Like A could be three, B could be six, C could be nine.
- R3 [pointing to the paper] Maybe to see... Maybe we can make a table? Can we make a table of this? What would it look like?
- Ariel [begins writing and asks James] James, what time is it?
- James [in the background] About four o'clock.
- R3 What are you doing? What is it?
- Ariel Oh God! [inaudible]
- [Ariel makes the following table:
A : 3
B : 6
C : 9
D : 12
E : 15]
- R3 What is that?
- Ariel Huh?
- R3 Three, six. Three is what?
- Ariel This is like dollars.
- R3 The dollars. And three goes with what? Each one goes with how many items bought?
- Ariel A goes with one, B goes with two.
- R3 Would you write the number of items next to it?
Ariel writes the numbers in front as follows:
1A : 3

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2 B : 6

3 C : 9

4 D : 12

5 E : 15

R3 [pointing to the table] So basically, one, three, two, six, right?

Ariel Yeah.

R3 So three for ... so what is the rule?

Ariel If you add the ... what is the name of this ... If you add the entrance price ... to this, five, seven. [tapping his pen on the last column of the table]

R3 Oh.

Ariel No, I mean eight.

R3 [pointing to the paper] So what is the rule?

Ariel [singing] It is three, three, three.

R3 Three what?

Ariel Because look if we add two here ...

R3 Hmm, hmm.

[Ariel talks as he adds two in the table as follows:

1A : $3 + 2 = 5$

2 B : $6 + 2 = 8$

3 C : $9 + 2 = 11$

4 D : $12 + 2 = 14$

5 E : $15 + 2 = 17$]

Ariel So you can see it is plus three, plus three, plus three, plus three.

R3 Does this problem remind you of any problem you did?

Ariel Not really problem? Oh, yeah, yeah, yeah. One about the gym, I think.

R3 The gym?

R3 [pointing to the paper] So you are telling me here that one goes with five.

[G1 hands to R3 a paper that he hands to Ariel.]

R3 So you want to write it down somewhere. Answer those questions. Does it remind you of some problem?

Ariel [writes in the paper and mumbles] The problem of gym membership. OK.

R3 You remember what it says?

Ariel Yeah, it was like ...

Ariel [writes] Both of these problems say to list like ... I mean find like ... a way of how you could represent this...

R3 Keep going.

Ariel [singing] how can you represent the total cash, amount of money for any number of anything, example, visits or crafts. I am done.