

Functions II

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Summary	The students will use three functions that are represented as a sequence of patterns and create a sequence of hops on the number line, a data table, and an algebraic expression to express the functions.
Goals	1. To see the interrelationships among the diverse representations. 2. To make up one's own function.
Materials	Overheads, White Board or Chart Paper, Handouts
Keywords	Full Class Discussion Function Representations Interpretation of Visual Patterns Linear Functions Number Lines Production of Algebraic Expressions Production of Tables

Activity Plan:

1. Describing the Patterns [Whole Class]

Using the overhead on Page 1, go over each of the 3 patterns, trying to elicit similarities and differences. Some questions to raise:

What happens as you move from left to right (i.e. from moment 1 to moment 4)?

By how much does the pattern grow each time?

Is this like multiplication or addition, or both?

If you used lesson "3.26 – Functions: Earning Money" you could also ask:

[After all 3 have been considered...] Does any pattern remind you of the problem earlier this week, about Tom going to work on his new job? If so, what do the numbers 1, 2, 3 refer to? What does each dot refer to?

2. Representing in a table [Whole Class]

Using the overhead on Page 2, fill in the table to show how many dots are contained at each moment for each pattern.

3. The Number Line: Skip counting [Whole Class]

Using the overhead on Page 3, show the hops begun for Pattern A. Ask what is happening. Ask the students to complete the sequence.

Then ask them to help construct the hops for the other two patterns using the handout on Page 4.

Why are the dots spaced differently for the different patterns? What does the spacing show?

Why don't they start at the same place?

4. Handout

Distribute the handout on Page 5. Kids should make their own pattern. They should fill in the corresponding table. They should also show the hops on the number line.

Discuss the kids' work, individually, and if there is time, as a group.

5. Homework (Page 6)

This is identical to the handout work. But presumably they will try to find a different pattern.

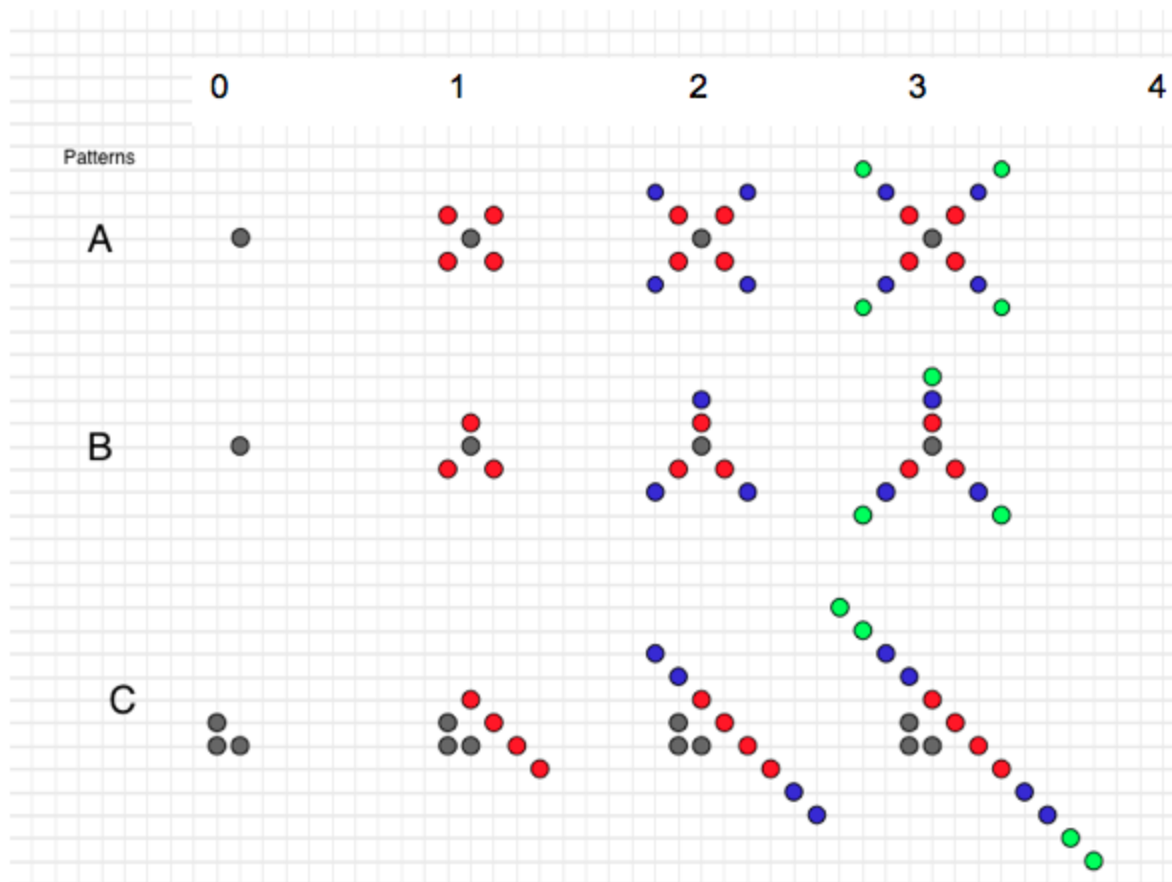
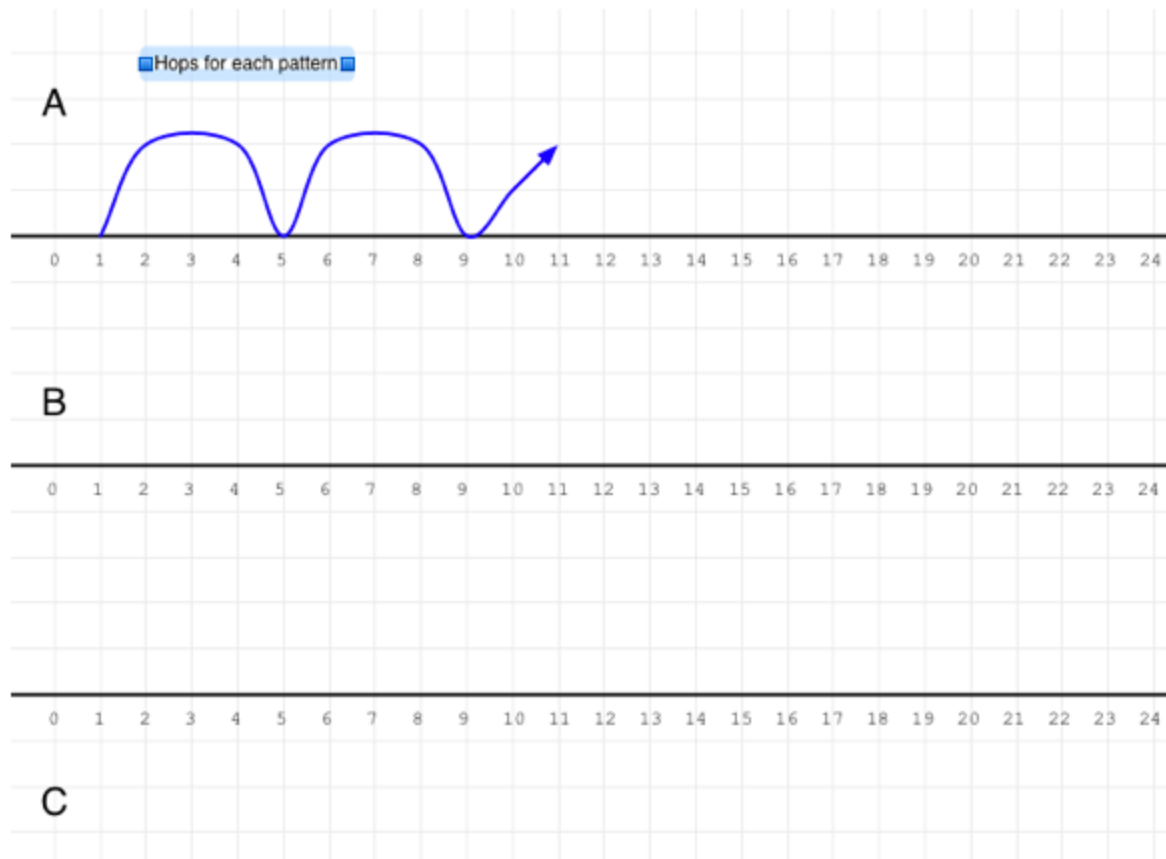
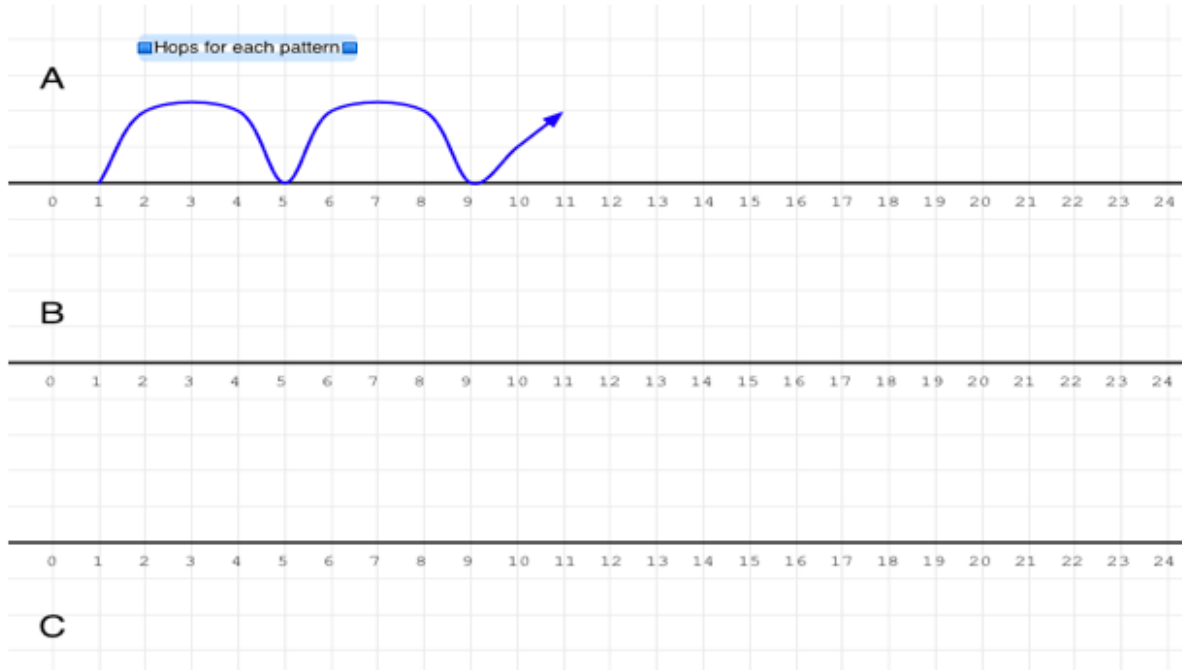
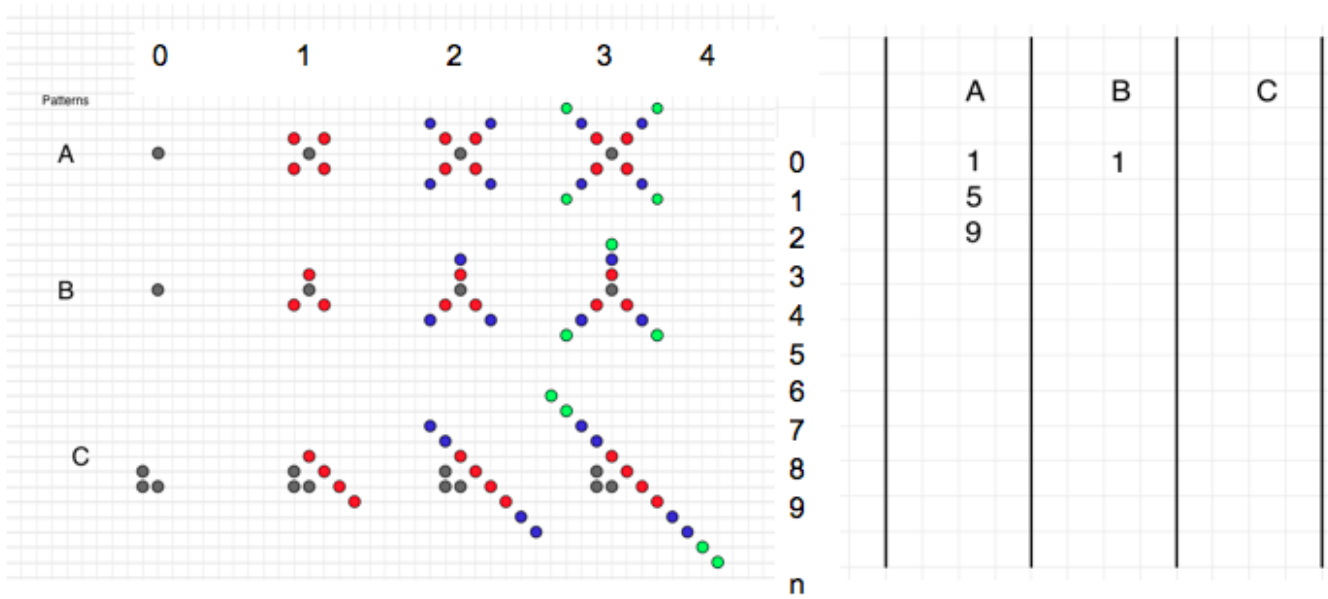


Table for each pattern		A	B	C
0		1	1	
1		5		
2		9		
3				
4				
5				
6				
7				
8				
9				
n				



Name: _____ Date: _____



Expressions

Overhead and Handout: Make Your Own Patterns, Hops, Table, and Expression (Page 5)

Name: _____ Date: _____

Create your own pattern and then draw the hops and create its table.

0 1 2 3 4

Your Pattern:

Hops for Pattern:



Table for Pattern:

0	
1	
2	
3	
4	
5	
6	
n	

Overhead and Homework: Make Your Own Patterns, Hops, Table, and Expression (Page 6)

Name: _____ Date: _____

Create another original pattern and then draw the hops and create its table.

0 1 2 3 4

Your Pattern:

Hops for Pattern:



Table for Pattern:

0	
1	
2	
3	
4	
5	
6	
<i>n</i>	