IM 9–12 MATH v.1

Unit 1
Sequences and Functions

ALGEBRA 1

Lesson 8

Spreadsheet Shortcuts

Illustrative Mathematics®

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Learning Goal

Let's explore recursive formulas in spreadsheets.

Algebra 1

Tables of Equivalent Ratios

Warm-up

Here is a table of equivalent ratios:

a	b
3	15
10	50
6	30
1	
	80

1. Complete the table with the missing values.
2. Explain what it means to say that the pairs of numbers are equivalent ratios.

The Birthday Trick

Write down the day and month of your birthday.

- Multiply the month by 5.
- Add 6.
- Multiply by 4.
- Add 9.
- Multiply by 5.
- Add the day.
- Subtract 165.

You will program a spreadsheet to perform this trick, and learn a few shortcuts for using spreadsheets along the way.

The Birthday Trick

Navigate to this activity in the digital version of the materials or to ggbm.at/djcz6fjf.

1. In cell B4, we want to enter = B1 * 5 to multiply the month by 5. Enter this, but when you are about to type B1, instead, click on cell B1. This shortcut can be used any time: click on a cell instead of typing its address.
2. Practice this technique as you program each cell in B5 through B10 to perform the right computation.
3. When you are finished, does cell B10 show a number that contains the month and day of your birthday? If not, troubleshoot your computations.
4. Try changing the month and day in cells B1 and B2. The rest of the computations should automatically update. If not, troubleshoot your computations.

The Birthday Trick

	A	B
1	month	11
2	day	27
3		
4	multiply month by 5	
5	add 6	
6	multiply by 4	
7	add 9	
8	multiply by 5	
9	add the day	
10	subtract 165	
11		

The Birthday Trick

- What new shortcuts did you learn in the spreadsheet?
- What other things did you have to remember about using spreadsheets?

Using Spreadsheet Patterns

The spreadsheet applet contains a table of equivalent ratios.

1. Use spreadsheet calculations to continue the patterns in columns A and B, down to row 5. Pause for discussion.
2. Click on cell A5. See the tiny blue square in the bottom right corner of the cell? Click it and drag it down for several cells and let go.
3. Repeat this, starting with cell B5.

The Birthday Trick

	A	B
1	6	2
2	12	4
3	18	
4	24	
5		
6		
7		
8		
9		
10		
11		
12		

I can use shortcuts to fill in cells on a spreadsheet.

Learning Targets

Algebra 1

Doubling in a Spreadsheet

Cool-down

A list of numbers is made with the pattern: Start with 3, and multiply by 2 each time.

Here is the beginning of the list of numbers: 3, 6, 12, . . .

Explain how you could use "fill down" in a spreadsheet to find the tenth number in this list. (You do not need to actually find this number.)