



Little Red's Crumby Day



There are 15 tiles on the path from Little Red Riding Hood's house to her grandmother's house. On the first tile, Little Red drops 2 crumbs of bread, on the second tile, Little Red drops 6 crumbs of bread, on the third tile she drops 18 crumbs, on the 4th tile 54, and so on.

1. Describe the pattern in the number of crumbs she drops on each tile.
2. Complete the table to show the number of crumbs dropped on each of the first six tiles. Write each term using ONLY 3's and 2's.

Tile	Number of crumbs
1	
2	
3	
4	
5	
6	

3. Now can you write each term using only **one** 3 and **one** 2 (not counting exponents)? Make a new table above, to the right of your original table.
4. How many crumbs will she drop on the 8th tile?
5. Little Red drops 1,062,882 crumbs on the 13th tile. How many will she drop on the 15th tile? How did you come up with your answer?
6. How many crumbs will she drop on the n th tile?
7. The 7th tile marks the half-way point to grandma's house.
 - a. How many crumbs does she drop on the 7th tile?
 - b. Kenny suggests multiplying this amount by 15 to determine the total number of crumbs dropped. Will this strategy work? Explain why or why not.

Lesson 4.2 – Change in Geometric Sequences

QuickNotes

Check Your Understanding

1. Write a formula for the sequence given by 2, 10, 50, 250...
2. If a_n is a geometric sequence with $a_4 = 48$ and $a_7 = 384$, find the common ratio, r , and a_1 .
3. For a given sequence, $a_1 = 22$ and $a_2 = 33$.
 - a. Find a_3 if the sequence is arithmetic.
 - b. Find a_3 if the sequence is geometric.
4. The first week of July was the opening week of the Deluxe Hotel. It had 200 guests that week. In the weeks immediately following this, the bookings decreased by 5% each week.
 - a. How many guests did the hotel have in the 3rd week? In the 11th week?
 - b. Write a rule that gives the number of bookings in the n th week.