Name:

Alice's Exponents

Assume that for every ounce of cake that Alice eats, her height doubles. Here are some things to think about.

1. How will her height change if she eats 1 ounce of cake?

2. How will her height change if she eats 2 ounces of cake?

3. How will her height change if she eats 3 ounces of cake?

4. How will her height change if she eats 5 ounces of cake? Convince me that you're right.

5. For *c* ounces of cake, how will her height change? Complete the chart below. Then justify your answer.

Ounces of Cake	Expanded Notation	Exponent Notation	Resulting Growth
1			
2			
3			
4			
5			
C			

Alice decides to go on a diet. She decides to eat only three ounces of cake at each meal (What a sacrifice!)

6. How will her height change after one meal?

7. After two meals?

8. After three meals?

9. Look for a pattern or rule. How will her height change after m meals of d ounces of cake at each meal? Why do think this rule works?

Number of Meals	Expanded Notation	Exponent Notation	Resulting Growth
1			
2			
3			
4			
5			
C			

Keep thinking: Would eating 4 ounces of cake at 6 meals have the same affect on Alice's height as eating 6 ounces of cake at 4 meals? How do you know?

How would you represent Alice eating 3 ounces of cake for two days then cutting back to two ounces for three days? How would her height change? How do you know this?