



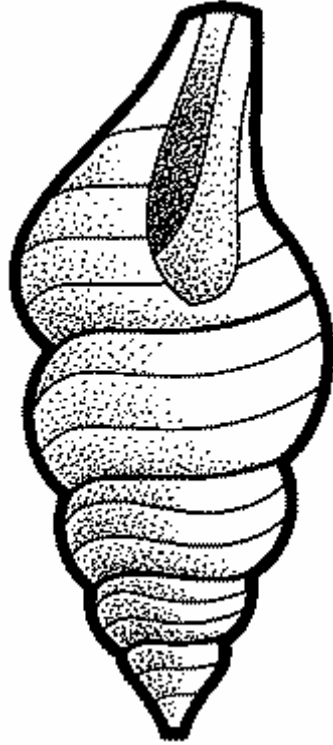
“I Don’t Get It!”

**The Middle School Math
Dictionary and
Instruction Manual**

By Nancy L. Wilkinson



Patterns and Functions



Subject Area	Word	Definition												
Patterns and Functions	Arithmetic Sequence	<p><u>A set of numbers arranged so that the same number is added to the preceding term</u></p> <p>Examples of an arithmetic sequence:</p> <p>a) 5, 10, 15, 20.....</p> <p>b) 2, 4, 6, 8, 10...</p> <p>c) 3, 6, 9, 12...</p>												
Patterns and Functions	Fibonacci Sequence	<p><u>A pattern of numbers where the sum of the preceding two numbers make up the next number - This pattern is often found in nature</u></p> <p>The Fibonacci sequence is: 1, 2, 3, 5, 8, 13, 21, 34</p>												
Patterns and Functions	Function	<p><u>A relationship that consists between two sets of data where one item from the first set is paired with one item from the second set</u></p> <p>An example of a function. The rule is: $a + 50 = b$</p> <table border="1"> <thead> <tr> <th>a</th> <th>b</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>51</td> </tr> <tr> <td>2</td> <td>52</td> </tr> <tr> <td>3</td> <td>53</td> </tr> <tr> <td>4</td> <td>54</td> </tr> <tr> <td>5</td> <td>55</td> </tr> </tbody> </table>	a	b	1	51	2	52	3	53	4	54	5	55
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Patterns and Functions	Geometric Sequence	<p><u>A set of numbers where the each term is found by multiplying the preceding term by the same number</u></p> <p>An example of a function is shown below. The function rule would be $a * 50 = b$</p> <table border="1"> <thead> <tr> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>50</td> </tr> <tr> <td>2</td> <td>100</td> </tr> <tr> <td>3</td> <td>150</td> </tr> <tr> <td>4</td> <td>200</td> </tr> <tr> <td>5</td> <td>250</td> </tr> </tbody> </table>	A	B	1	50	2	100	3	150	4	200	5	250
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Patterns and Functions	Input	<p><u>The first variable in a function – What you would put into the function machine</u></p> <p>Example: In the function below, column a would be the input.</p> <table border="1"> <thead> <tr> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>50</td> </tr> <tr> <td>2</td> <td>100</td> </tr> <tr> <td>3</td> <td>150</td> </tr> <tr> <td>4</td> <td>200</td> </tr> </tbody> </table>	A	B	1	50	2	100	3	150	4	200		
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Patterns and Functions	Interest	<p><u>The amount you would pay on a loan in addition to how much you borrowed (the principal)</u></p> <p>The formula for finding the interest is: $I = PRT$ where I = interest, R = rate (interest rate), T = time.</p> <p>Example: If John borrowed \$3,000 for two years at a rate of 10%, the interest would be: $I = 3,000 \cdot .1 \cdot 2 = \\600.</p>												
Patterns and Functions	Output	<p><u>The second variable in a function – What would come out of the function machine</u></p> <p>Example: In the function below, column b would be the output.</p> <table border="1"> <thead> <tr> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>50</td> </tr> <tr> <td>2</td> <td>100</td> </tr> <tr> <td>3</td> <td>150</td> </tr> <tr> <td>4</td> <td>200</td> </tr> <tr> <td>5</td> <td>250</td> </tr> </tbody> </table>	A	B	1	50	2	100	3	150	4	200	5	250
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Patterns and Functions	Principal	<p><u>The amount you borrowed</u></p> <p>The formula for finding the principal is: $P = I \div (R \cdot T)$ where I = interest, R = rate (interest rate), T = time.</p> <p>Example: If john had to pay \$300 in interest at a rate of 5% for one year, what is his principal? $P = 300 \div (.1 \cdot 1) = 300 \div .1 = 3000$</p>												
Patterns and Functions	Rate	<p><u>The percentage rate per year in interest for a loan</u></p> <p>The formula for finding the rate is: $R = I \div (P \cdot T)$ where I = interest, R = rate (interest rate), T = time.</p> <p>Example: If john borrowed \$3000 for two years and paid \$600 in interest, what was his rate? $R = 600 \div (3000 \cdot 2) = 600 \div 6000 = .1$ or 10%</p>												
Patterns and Functions	Sequence	<p><u>A set of numbers arranged according to some pattern</u></p> <p>Example: 2, 4, 6, 8 ...</p>												
Patterns and Functions	Term	<p><u>The name for each number in a sequence</u></p> <p>In the sequence, 2, 4, 6, 8..., any one number would be a term (2, 4, 6 or 8)</p>												