Rubric – Applying Mathematical Processes through Coding to Solve Problems

Curriculum Expectation: <Insert expectation here>

The Student…	**LEVEL**				
Criteria	**4**	**3**	**2**	**1**	**R**
KNOWLEDGE					
Understanding of mathematical concepts (significance of given and required information, comprehension of calculations)	*Demonstrates thorough understanding of math concepts and meaning of the calculations in the code*	*Demonstrates considerable understanding of math concepts and meaning of the calculations in the code*	*Demonstrates some understanding of math concepts and meaning of the calculations in the code*	*Demonstrates limited understanding of math concepts and meaning of the calculations in the code*	
INQUIRY					
Use of critical/creative thinking processes (problem solving, computational strategies, verifying/testing/debugging)	*Uses problem solving skills and selects computational strategies to solve the math problem through coding with a high degree of effectiveness*	*Uses problem solving skills and selects computational strategies to solve the math problem through coding with considerable effectiveness*	*Uses problem solving skills and selects computational strategies to solve the math problem through coding with some effectiveness*	*Uses problem solving skills and selects computational strategies to solve the math problem through coding with limited effectiveness*	
	Tests the program using varying input values and debugs the program with a high degree of effectiveness	*Tests the program using varying input values and debugs the program with considerable effectiveness*	*Tests the program using varying input values and debugs the program with some effectiveness*	*Tests the program using varying input values and debugs the program with limited effectiveness*	
COMMUNICATION					
Expression and organization of ideas and mathematical thinking (meaningful variable names, input/output statements with mathematics vocabulary)	*Expresses and organizes math thinking in interface and code with a high degree of effectiveness*	*Expresses and organizes math thinking in interface and code with considerable effectiveness*	*Expresses and organizes math thinking in interface and code with some effectiveness*	*Expresses and organizes math thinking in interface and code with limited effectiveness*	
APPLICATION					
Transfer of knowledge and skills to new contexts (applies programming through mathematical procedures to real life situation)	*Transfers knowledge and skills of mathematical situations to computer program code with a high degree of effectiveness*	*Transfers knowledge and skills of mathematical situations to computer program code with considerable effectiveness*	*Transfers knowledge and skills of mathematical situations to computer program code with some effectiveness*	*Transfers knowledge and skills of mathematical situations to computer program code with limited effectiveness*	

By: Lisa Floyd(@lisaannefloyd), 2015 – Adapted from: Ministry of Education, Mathematics, Grades 1-8, 2005