Anoka-Hennepin Secondary Curriculum Unit Plan

Department:	BME	Course:	Video Game Design and Marketing	Unit 3 Title:	Variables, Math, Loops, Statements	Grade Level(s):	9-12
Assessed Trimester:	A	Pacing:	4-6 Days	Date Created:	4/23/2014	Last Revision Date:	

Course Understandings: *Students will understand that:*
- Writing programing code is essential in designing effective 3D programs.
- The organization of basic elements is important in creating a well-designed program.
- Ethics is an important aspect of working with intellectual property.

DESIRED RESULTS (Stage 1) - WHAT WE WANT STUDENT TO KNOW AND BE ABLE TO DO?

Established Goals

- **Computation I. Mathematical Foundations:** Apply basic mathematical operations to solve problems.
- **Computation II. Number Relationships and Operations:** Solve problems involving whole numbers, decimals, fractions, percents, ratios, averages, and proportions.
- **Computation III. Patterns, Functions, and Algebra:** Use algebraic operation to solve problems.
- **Information Technology IV. Input Technologies:** Use various input technologies to enter and manipulate information appropriately.

Transfer

Students will be able to independently use their learning to: (product, high order reasoning)
- Apply computational skills and intermediate programing commands to produce an intermediate multi-screen response to the user input

Meaning

Unit Understanding(s):	Essential Question(s):
Students will understand that: • Variables are places to store unknown information • Computation order is important • Using the random number function will create unpredictability • Using For Next Loops will allow an action to be repeated a specific number of times • Using If Then statements is a decision tool used by programmers	**Students will keep considering:** • What type of variable will I use? • How can I position objects randomly? • How can I color objects randomly? • How can I repeat an action? • How can I get a program to make decisions?

Acquisition

Knowledge - Students will:	Skills - Students will:
• Recognize the different variables used in programming. (text, integer, and real number) • Understand proper syntax for the programming language being used • Describe or define the purpose of the intended command (i.e. For/Next, IF/THEN.) **Reasoning - Students will:** • Analyze code to determine outcomes • Organize math operations to perform math calculations correctly	• Create a program to meet the desired results based on user input.

Common Misunderstandings ● Order doesn't matter when performing math operations ● Computers can't make decisions	**Essential new vocabulary** ● Variables ○ text, integer, real number ○ restricted words ● PEMDAS ● Programming Commands ○ input ○ RND ○ For Next ○ If Then ● Condition ● Logical Operator