**Structured Programming I Module (Due Nov)**

**Major Learning Objectives:**

* Students are introduced to a general programming environment in which they write simple structured algorithms and programs that input, process and output data, use some of the more basic operators and data types, and follow a sequential flow of control.

**This module is completed on your own. Group problem solving is encouraged. This entire module is completed through the use of Hopscotch, a beginner programming app for IPad. Students must bring their IPad to every single class. Please ensure that your IPad is charged, as this program can use a lot of power.**

 The list of tasks to complete this module is as follows:

**Class 1**: Etch-a-sketch: Use the tutorial (Lesson 6, page 17) at the following link to create your own Etch-a-sketch. Be sure to publish or save your work as a draft or publish it. Show me when you are complete.

* <http://www.uen.org/utahstandardsacademy/science/downloads/6-3-Starter_Hopscotch_curriculum.pdf>

**Class 2**: Use the tutorial (Lesson 1) at the following link to create the Crossy Road game at the following link. If you finish early you can work on the Differentiation section of the tutorial. Show me when you are complete.

* <http://hopscotch-curriculum-files.s3.amazonaws.com/Hopscotch%20Curriculum%202015.pdf>

**Class 3**: Use the tutorial (Lesson 3) to create a quiz. You can change your questions or answers as you please, as long as it is functional and school appropriate. If you finish early you can work on the Differentiation section of the tutorial. Show me when you are complete.

* <http://hopscotch-curriculum-files.s3.amazonaws.com/Hopscotch%20Curriculum%202015.pdf>

**Class 4**: Using the same link as above, work through either lesson 5 or 6 using the tutorial. Show me when you are complete.

**Major Project**: Design and create your own game. Run your idea by me before you start your code. Here are things to think about. Those points in bold SHOULD DEFINITELY BE EVIDENT:

* **What is the function of the game?** (pure fun, problem solving, puzzle, trivia, matching, etc.)
* How do you win? What is the purpose?
* Should you keep a score?
* **After you have a general code complete, how can you tweak it to make it a little better?**
* **Is it easy to use?** Do I need a tutorial to know what I need to do to play?
* Who is your target? (Small children – basic game, teens, young adults?)

During each class you should complete the reflection page to document your progress and any issues you have been having. When everyone has created a game you will play someone elses and then write a review of their project. The points that you make in your review will help me grade other games but will also be part of your grade for the module. Therefore, you should only include constructive criticism (no rude comments, as it will reflect poorly on your own grade).

Structured Programming I - Grading Rubric

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| --- | --- | --- | --- |
| Task  | 1 | 3 | 5 |
| Etch-a-Sketch | Student has missed several crucial components of their coding.  | Student has completed a code but has not debugged problems, therefore, it does not work as it should.  | Program was completed and works perfectly.  |
| Crossy Road | Student has missed several crucial components of their coding. | Student has completed a code but has not debugged problems, therefore, it does not work as it should. | Program was completed and works perfectly. |
| Quiz | Student has missed several crucial components of their coding. | Student has completed a code but has not debugged problems, therefore, it does not work as it should. | Program was completed and works perfectly. |
| Lesson 5/6 | Student has missed several crucial components of their coding. | Student has completed a code but has not debugged problems, therefore, it does not work as it should. | Program was completed and works perfectly. |
| Project: Function of game | Student has not thought about what type of game they want to make.  | Student has put some thought into their game but seem to have missed some key ideas.  | It is clear that the student carefully planned out what type of game they wanted to make.  |
| Project: User friendly | The game is very difficult to understand/get the hang of.  | The game is kind of difficult to understand. I need instructions or a tutorial to know what I have to do.  | The game is very easy to understand. I know exactly what I have to do.  |
| Project: Debugging/Tweaking | Student is unable to point out a piece of code that they have debugged or tweaked.  | Student can point out a piece of code that they have had to edit but cannot describe why it has made their game better.  | The student can point out a piece of code that they have had to edit to make their code work OR to make their game better in some way.  |
| Project: Reflections | Student has not completed a reflection for several classes and/or have very short answers.  | Student has completed a reflection for each class but should have added more detail. | Student has completed a descriptive reflection for each class that they have worked.  |
| Project: Peer Review/Peer Assessment | Student has not completed a peer review or has not taken the peer review seriously.  | Student was very short in their peer review.  | Student provided great detail and very good constructive criticism for their peer review.  |
| Teacher Comments:  |