Structure and Error Handling
Lesson 11 – Expert Coding in Minecraft with JavaScript

1. What is the significance of events in programming?

2. What is event-driven programming, and how does it differ from sequential control flow?

3. What is the purpose of program documentation?

4. What are the key elements and purposes of program documentation?

5. What are comments?

6. What are the two ways to do comments in JavaScript?

7. Describe the following types of errors in code:

    a. Logic error –

    b. Syntax error –

    c. Run-time error –

    d. overflow error –

8. What can happen if a program with a logic error is run?

9. Describe the following logic errors:

    a. Incorrect Conditions or Expressions –

    b. Off-by-One Errors –

    c. Misunderstanding Operator Precedence –

10. What will happen if there is a syntax error in the code?

11. What will happen if there is a runtime error in the code?

12. List and describe examples of runtime errors.

13. Describe the following methods for finding and correcting errors:

    a. Test cases –

    b. Hand tracing –

    c. Visualizations –

    d. Debuggers –

    e. Adding extra output statement –

In Game Assessment References:

**For Activity Assessments, students will build the code completely on their own. They need to press C at the activity area and create a new project. When complete, they will save their MakeCode file and upload it to the portal for grading.

Activity Assessment 1:

Create code that has the agent build a 5 x 5 x 5 hollow cube where each row is a different color concrete, pulled from an array named colors. Use the following colored concrete: Yellow, Blue, Red, Green, and Purple. Use a function named *cube* and an on chat command named *build*. Use a variable named *level* and both a for loop and a while loop. Also, have the player say how many levels are left after the agent completes each level with the following sentence, "The agent has ____ levels left," by using an if/else statement.

Activity Assessment 2:

Import the starter code and fix the errors. There are four errors.

Final Assessment: Mini Game:

This game is intended to do the following: The player will control the agent in the chat with the words forward, right, left, back, and up. When the agent moves, it will destroy forward and collect the diamond blocks. Each time the agent collects a diamond, the variable diamond increases by 1 and the player will say how many diamonds were collected. There is a timer that counts to 60 seconds. At the end of 60 seconds, the game will let you know how many diamonds the agent collected and assign the player either a slow miner, pretty quick miner, or fast miner.