Lesson 12: Find that Bug!

Powerful Ideas of Computer Science	Debugging
Powerful Ideas of Literacy	Editing and Audience Awareness, Phonological Awareness
PTD	Communication
Palette of Virtues	Forgiveness, Perseverance, Patience
Children will be able to…	• Define and celebrate the process of debugging. • Identify strategies for debugging and editing. • Locate errors or "bugs" in ScratchJr code. • Troubleshoot bugs in ScratchJr • Locate errors in English text (e.g., spelling errors, letters written incorrectly).
Vocabulary	
Teacher Preparation	• Read lesson plan • Have the Error Examples slideshow open in a new tab and ready to project. • Have the Buggy Projects slideshow open in a new tab and ready to project. • Print Lesson 12 Design Journal for each child or refer to Full Design Journal.

Warm Up

- **Error Examples (***Suggested Time: 5 minutes)*
  - Show Error Examples in ScratchJr programming language and English language to class.
    - Ask children what's wrong with these programs/words/sentences.
    - How can we fix them?

Opening Tech Circle

- **Test & Improve (***Suggested Time: 5 minutes)*
  - Discuss examples of testing & improving.

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        - In coding, a computer encounters an error that doesn't work.
        - In literacy, a person comes across an error and can sometimes read it anyway, but sometimes it's too hard and can't be read.
    - Explain the difference between changing for looks as opposed to debugging.
        - E.g., Changing for looks - changing Cat from orange to blue.
        - E.g., Debugging - Changing the program so that Cat moves in the correct direction.

ScratchJr Time

Structure Challenge:

- **Buggy Projects (***Suggested Time: 15 minutes)*
    - These ScratchJr projects have some errors in them. Recreate these projects or make your own to share with the class. Each project contains a prompt with what the programmer wanted to have happen and what is actually happening. These projects need to be debugged to work:
        - I want Cat and Bunny to jump to collect apples from the trees, but only Cat is jumping to collect apples, and Bunny is moving to the right.
        - I want Cat to disappear and then get bigger and reappear, but Cat disappears, reappears, and then gets smaller.
    - When children find bugs, engage in the celebration of the debugging process
        - Classroom - high fives and encouragement
        - Virtual - Applause and thumbs up.

Word Time

- **Lesson 12 Design Journal** *(Suggested Time: 10 minutes)*
    - Have children open up their Design Journals to Lesson 12 and practice finding and fixing errors on their own! Tell them to circle every time they find an error and then write their fix in the box next to it.

Closing Tech Circle

- **Debugging Reflection (***Suggested Time: 10 minutes)*
    - Brainstorm strategies for debugging writing.
        - E.g., Rereading your writing to find errors, having a friend look at your writing

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