Write It, Do It

Instructor's Handout

1 Educational Objective

In this activity, students will introduce and reinforce several computer science concepts. The first of these concepts is explicitness and thoroughness in programming. Although this concept is introduced and explored in the **sandwich activity**, it is an important concept and bears reinforcement. It's important to remind students that computers are not smart–they only do what their programmers tell them to do. This activity also reinforces the idea of debugging–of seeing the output of your program, and changing your program to give the output you desire. The Writers will be able to see how the Doers interpret their instructions, and then will be given an opportunity to change their instructions to produce a better output. Debugging is also introduced in the **sandwich activity**, but as debugging is a huge part of computer science, it is another concept that bears repeating. The ideas of conditionals and conditional logic are introduced in this activity. The Writers will have to describe the actions needed to produce three possible outcomes, and the different courses of action that the Doers must take to figure out what to do.

2 Introduction

In this game, students will be paired up. One student is the Writer, an dthe other is the Doer. The Doer will leave the room, and the Writer will be shown three structures. The Writers will have 15 minutes to describe to the Doer not only how to build each structure, but also how to figure out which structure the Doer has the materials to build. After time is up, the Doers will be given a set of materials and 10 minutes to create one of the structures. After this time is up, the Writers will be allowed 5 minutes to issue additional instructions to help the Doers "debug" their structures. The Doers will then have another 5 minutes to try to "debug" their structures.

3 Materials

4 Rules

1. The Writer cannot touch any of the structures.

2. The Writer may use letters, numbers, and any of the following symbols:
   . , ; : - + = ( ) ' " ? ! / % $ & ><

3. The Writer must define any abbreviations used.

4. The Writer does not need to write in complete sentences.

5. The only form of communication permitted between the Writer and the Doer is the Writer's instructions– no talking.

5 Notes

- Doers may get more parts than they need in their assembly kits.

- Encourage the Writers to look at the structures from different angles and points of view.

- Suggest that students consider the qualities of the individual components themselves, the spatial relationships between the components, and the directions in which the components are facing.

- Also suggest that students consider the relationships of the components in both an absolute sense (where they are in relation to the viewer) as well as a local sense (where they are in relation to each other).

6 Scoring

Teams will be scored based on the overall number of correct connections. If necessary, the tiebreaker is determined by which Doer completed the structure faster.

7 Resources

1. "Write It, Do It". Science Olympiad Student Center. *<http://scioly.org/wiki/Write_It_Do_It >*.

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3 Notes

- Doers may get more parts than they need in their assembly kits.
- Although Writers may not touch the structures, they may walk around and look at the structures from different angles. Remember, sometimes it's easier to describe something from a different point of view.