Dance Algorithm Worksheet

Name:_____ Date:_____

Your task is to provide written instructions on how to perform your favorite dance.

Your teacher will follow these instructions exactly word for word, so be specific.

Write your instructions on this page and number each step. Good luck!

The following instructions are an example for the "Hokey Pokey" dance:

1. Move your right foot in front of you.
2. Move your right foot back to its starting position.
3. Move your right foot in front of you, and
4. Aggressively shake your right foot for a duration of 4-6 seconds
5. Move your right foot back to its starting position
6. Raise both hands above your head and wiggle all fingers for a duration of 2-3 seconds
7. Rotate your body 360 degrees to the right on the Y-axis
8. Clap while pronouncing each syllable and loudly exclaim, "That's what it's all about!"
9. Repeat steps 1-8 for all other extremities. Stop dancing after performing the Hokey Pokey using your left foot, right arm, and left arm in that order.
10. (Same style of instructions for the rest of the song)

Algorithm Discussion

Bell, Tim, et al. “Activity 12 Marching Orders.” Computer Science Unplugged . . . off-Line Activities and Games for All Ages, 1998.

1. Discuss whether it would be good if people followed instructions exactly. An example would be to point at a closed door and ask someone to go through that door.
    a. Ask students to give some examples of directions, and show or explain what the outcome would be if their directions were carried out exactly as stated.
    b. Give some revised versions of given directions. For example, instead of saying “go through that door” while it is closed, you could say “go to that door, open the door, and walk through the opening.
2. Explain that computers work by following lists of instructions, and that they do exactly what the instructions say, even if they are incorrect.
    a. Explain how this can lead to an undesired outcome from the computer, and that in order to try to create the most successful program, we should try to match the mindset of the computer.
    b. One of the biggest things for this mindset would be assumptions, and that we assume the computer understands basic things, even though we need to explain everything to the computer.