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Ways of Knowing Math

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Solving Equations Unit Lesson Reflection – LAP 4

I loved the start to this lesson! Telling my students that I was going to trick them definitely got their attention, and for the first round of the secret number game I tricked everyone except Ricky. Then I had Ricky come up and think of a secret number and the class played the game with him, and a few more people got what was happening. Xavier ran the third round and by then a lot more people had caught on, so I let people share their ideas out loud. I then drew out a flowchart on the board and showed how you could work backwards using the flowchart and drawing arrows in the opposite direction.

Instead of having students play the secret number game in pairs, I had them go right into working on the number puzzles sheet. It had been a great week of them working hard in small groups or individually, and this period was no exception. I was happy to see that most students were writing out flowcharts or at least number sequences for each question, and every time someone asked me for help, I made sure that they were writing out their work. This class was capable of drawing their own flowcharts and staying decently organized with their work, but perhaps for other classes in the future who struggle more with this, I could have blank flowchart templates available for them to use.

As students worked on the number puzzles, I noticed a few different misconceptions. I had been using the terminology “reverse with the inverse,” which I had heard Kate use in her class and liked, as well as “do the opposite.” While most students understood that they needed to do the opposite operation, a few thought they also had to change the sign of the number (i.e. change from positive to negative or vice versa). This was a good opportunity for me to reflect on the language I was using. Perhaps I needed to specify more that this idea of inverse and opposite only applies to the *operation*, not the number itself. A related discussion arose when students needed to undo adding -4. Many of them just subtracted 4. This led me to circle back to integer rules and explain that adding -4 is the same as subtracting 4, so to undo that we can just add positive 4. We also talked about how you could subtract -4, which would be the same as adding positive 4, and goes along with the idea of doing the inverse or opposite operation.