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Ways of Knowing Math

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Solving Equations Unit Lesson Reflection – LAP 1

I began my unit the first day back from winter break, so a lot of catching up with students was mixed in with the actual lesson. The starter, which asked them what sort of playground they would want to build, hooked them well. I had to cut off the sharing after ten minutes so that we could segue into the math! I find myself often struggling to transition smoothly from the starter to the rest of the lesson, and bringing up the idea of having a seesaw felt a little forced to me. I’m not sure if the students detected that, for they did well using the concept of a seesaw for the rest of the class, but I felt that perhaps the starter’s connection to the lesson was a bit of a stretch.

Anyway, many students were at first confused when I asked them to figure out how many Redeits balance one Mr. Strogoff. But the ensuing sharing of methods and class conversation seemed to clarify the important idea of keeping both sides equal; I watched many students have “aha” moments. A good portion of my students are visual learners, so drawing pictures on a balance scale became the preferred method of the class. I put manipulatives at the front table for people to use, but I never explained exactly how to use them to model this scenario, which I think stopped students from taking advantage of them. The next time I teach this lesson, I want to show them on the Elmo how they can use manipulatives similarly to how they use drawings.

They spent the next three days working on the “Balancing Problems” and “Algebra Balance Scales” worksheets. The idea of substitution that briefly comes into play on the Balancing Problems sheet tripped up a few students at first, but as I worked with them individually, I saw that with a little thought, this idea of substitution seemed almost natural to them. I don’t quite know how to describe it, but the students who initially struggled could understand that 30 forks balance 2 plates (in problem 3 on the Balancing Problems sheet) before they could tell me why. Even Edward was able to reach this conclusion pretty much on his own! Now, getting my students to break down what they did in their head and recognize all the different steps was the next struggle, which I am still working on as we’ve transitioned to solving equations algebraically.

A group of students finished all the work on the second day, so I had them work on the coconuts problem extension while the rest of the class finished the Algebra Balance Scales packet. I was really impressed by their perseverance on this problem – especially Jerika, who usually gives up. They were using drawings, manipulatives, and equations to try and figure it out, and I gave them some hints from time to time. It took them a full class period to complete, and I was left wondering how I can replicate that “good struggle” experience for them in future lessons with the same level of buy-in.

In the Algebra Balance Scales packet, I had my students write two equations: one to model the original scenario and one to model the answer, in which they had to solve for a certain variable. The next time I do this lesson with my students, I want to have them write out equations after each canceling out step that they do. This way they will more explicitly see what it takes to solve an equation, and it will reinforce the idea of showing work. This would also provide a great opportunity to do a “What do you notice?” based on the sequence of equations they write, possibly leading them to figuring out the algebra behind it on their own.