Incorporating Science Inquiry Concepts in Algebra 1 Lesson Plans

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MONTANA STATE UNIVERSITY | Master of Science in Science Education

Goal: Motivate students learning basic Algebra through active, inquiry based lessons using the 5E lesson format: Engage, Explore, Explain, Elaborate and Evaluate.

Background

I recently switched from physics to the math department at my large, urban public high school. There is interest from administration at the school and district level for math classes to be more student centered, yet the age old routine of teaching through text book examples and repetitive practice is still the norm. I believe that a lack of planning time and existing inquiry based lessons for the topics in our curriculum is a main reason teachers keep using lecture based delivery.

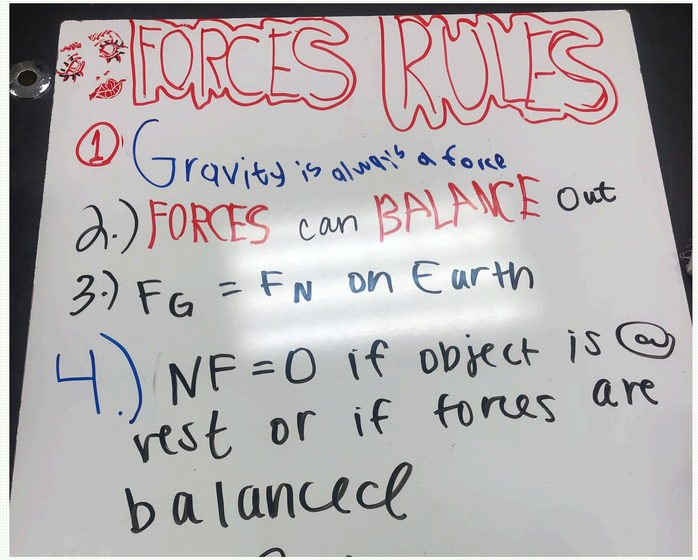
I have created five lessons for Algebra 1 using my experience of teaching physics with modeling and inquiry based practices.

Instructional Material

5E Lesson plans were created for the following topics:

- Translating word problems into Algebraic equations
- Developing and using rules for exponents
- Multiplying binomials
- Creating and interpreting graphs
- Percentages and Ratios

Each lesson includes an opportunity for students to apply the concept in an activity, ways to make the learning more cooperative, and assessments with accommodations for different learners.



A whiteboard from my physics class. I will use similar lessons for students to develop their own set of mathematical rules based on observations.

Professional Reflection

During the process of creating Algebra lessons with inquiry, I reflected the importance of the order of lessons and on students' common misconceptions.

I look forward to implementing the lessons and making revisions based on how my students receive them.