Production of Tables

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12. **Three Heights Review** - In this class we will explore: (a) How children deal with comparisons, (b) How they draw inferences from comparisons, and (c) How they represent comparisons between three unknown amounts.
13. **Two Phone Plans I** - Students compare two phone plans, one of which has a lower rate, but a monthly basic charge; the other has a higher rate but no basic charge.
14. **Wallet Problem I** - Students compare the amounts of money two students have. The amounts are described relationally but not through precise dollar amounts.
15. **Wallet Problem II** - Students will be given a wallet problem. They will be asked to compare the amounts of money two students have. The amounts are described relationally but not through precise dollar amounts.
16. **Wallet Problem III** - Students will continue working with the wallet problem. They will be shown a graph for Mike's amounts and asked to (a) determine whether it represents Robin's or Mike's money and (b) to predict where the line for Mike would fall. Later they will plot Mike's amounts and will discuss why the lines cross.

Fifth Grade Lessons

1. **Elapsed Time** - A variant of the train crash problem is used to address questions about elapsed time. The task is to determine where a train is, given a certain time.
2. **Equations and Graphs** - Students will further compare two linear functions in the context of evaluating two plans for shoveling snow. One plan has two parts: a basic charge plus a charge based on the number of square meters cleared. The other plan has no basic charge; it only charges according to the number of square meters cleared. However the per-meter charge is higher than in the other plan. Students are asked to determine the circumstances in which the bill from each plan would be the same. They then examine the graph of the two functions and discuss how equations and inequalities relate to the graph.
3. **Fifth Grade Assessment III** - This assessment will focus on writing equations to solve verbal problems and on solving equations using the syntactic rules of algebra.
4. **Train Crash** - Students will compare two linear functions represented in a graph. They reason about the problem using (a) the word problem and two diagrams; (b) a graph of position vs. time; (c) a table of values (d) making expressions for each position function; and (e) solving the equation algebraically.
5. **Wallet Review Problem** - This activity is a review of the Wallet Problem done in fourth grade. It is intended to introduce new students to some of the concepts we have covered and to refresh the memories of our old students. Students compare the amounts of money two students have. The amounts are described relationally but not through specific dollar amounts.

Middle School Lessons

1. **Compare and Contrast** - Students will identify the y-intercept and slope using equations and then use that data to create corresponding tables and graphs.
2. **Coupon Activity** - Students will create graphs, tables and equations to explain their stories and look at how a graph changes depending on the y-intercept.
3. **Curves in a Cubic** - Students will explore different kinds of cubic functions through graphs and tables.
4. **Graphing Equations - Nonlinear Functions** - Students write equations for three graphs and examine their slopes by comparing and contrasting the graphs. Students also look at the same functions graphed on differently scaled coordinate planes.
5. **It Depends** - Students will think about how we can show a dependent relationship between two quantities, using a variety of representations.
6. **Jason's Tree House** - Students will extract data from a story and use tables and graphs to answers questions about proposed scenarios.
7. **Sound Loudness** - Students will examine a non-linear function depicted in a graph and generate the corresponding function table and equation.