At the end of a percent chapter in Algebra 1, I wanted to get away from the routine review worksheet. So I decided to come up with a story-like problem that reviewed all the key concepts of the chapter. The problem deals with the students winning a small lottery. At this point there are two forms. One form has the students invest their money into a simple interest account before spending any money. The other form has the students spending some of their money and investing the remainder at a later time. At the end of the activity the students share their findings and notice it is better to invest early and spend later.

The unit objectives were to understand and solve problems involving percents, proportions, percent of change, simple interest, and mixture problems. This review sheet covered all of those objectives through the process of the story. My students responded well to the review sheet. It not only gave them an opportunity to apply the percent chapter to a real-life application, but also reminded them of the major topics that were discussed throughout the chapter that they were to be tested on.

The Small Lottery (form 1)

You win $20,000 and listed below is what you did with your money. Your mission is to figure out how much you'll end up with!!!

1. You decided that you should invest your money, just to raise it a little. You put your money into two simple interest accounts. Some of the money went into an account gaining 8.5% annual interest and the remaining into an account gaining 12% annual interest. Your goal is to earn the same amount of interest in both accounts over a two-year period. How much should you invest into each account? Approximate to the nearest cent.
   At 8.5% = ___________________   At 12% = ___________________

2. How much interest did you make in each account at the end of the two-year period?
   Interest made in each account: ___________________
   What is your total after the two-year investment? _______________

3. At the end of the two years you take your money out of the bank and go on shopping spree. You buy each of your friends a present and it wiped out 11.5% of your money. How much did you spend on gifts? How much do you have remaining?
   Money spent on gifts: ___________________   Total: ____________
4. Now that you shopped till you dropped, you're on your way home and you pass the Dodge dealer. They are having an overstock explosion and are slashing their prices. So you decide to buy the Dodge Avenger that was listed at $19,705 and is now reduced to $14,925. What percent are you saving? How much money do you have remaining?
Percent:________________________    Total:______________

5. The taxes, title, and insurance are extra. The tax rate on the Avenger is 6.75%, the title is $40.00 and insurance for one year is $1,200. How much do you have to pay for taxes? How much money do you have remaining after buying the car?
Amount of taxes:________________________    Total:______________

6. Finally you get home and you forgot you have to watch 11 little geniuses. They love Kool-Aid, but only a particular way. Their Kool-Aid mixture should contain 5.5% sugar. If you had previously made 11 cups of Kool-Aid that contained 2% sugar and another batch of Kool-Aid that contained 8% sugar, how much of the second mixture would you have to add to the first mixture to obtain the 5.5% sugar mixture?
How many cups:________________

7. You get paid $7.00 per genius. You did such a nice job that you also get a 15% tip. How much did you get to watch them? Now how much money do you have remaining?
Paid:________________________    Total:______________

8. You are now feeling awfully generous and you decide to donate 23% of your remaining money to the math department in your local high school so the teachers could have calculators for everyone in their class. How much money did you donate? How much do you have remaining?
Donated:________________________    Total:______________

9. Finally you’re tired of spending money so you are going to prepare for retirement. You invest your remaining money into a great account gaining 17% in simple interest. If you leave it there for 40 years, how much total money will you have when you take it out in 2043?
Amount gained after 40 years:________________________    Total:______________

The Small Lottery (form 2)

You win $20,000 and listed below is what you did with your money. Your mission is to figure out how much you'll end up with!!!

1. You decide the first item up for business is to go on a shopping spree. You buy each of your friends a present and it wiped out 11.5% of your money. How much did you spend on gifts? How much do you have remaining?
Money spent on gifts:________________________    Total:______________
2. Now that you shopped till you dropped, you're on your way home and you pass the Dodge dealer. They are having an overstock explosion and are slashing their prices. So you decide to buy the Dodge Avenger that was listed at $19,705 and is now reduced to $14,925. What percent are you saving? How much money do you have remaining after you buy the car?
Percent: ____________________     Total: _____________

3. The taxes, title, and insurance are extra. The tax rate on the avenger is 6.75%, the title is $40.00 and insurance for one year is $1,200. How much do you have to pay for taxes? How much money do you have remaining?
Amount of taxes:______________     Total: _____________

4. You decided that you shouldn't spend all of your money. So you invest your money into two simple interest accounts. You put some of the money into an account gaining 8.5% annual interest and the remaining part into an account gaining 12% annual interest. Your goal is to earn the same amount of interest in both accounts over a two-year period. How much should you invest into each account? Approximate to the nearest cent.
At 8.5%=_________________   At 12% =_________________

5. How much interest did you make in each account at the end of the two-year period?
What is your total after the two-year investment?____________________

6. Finally you get home and you forgot you have to watch 11 little geniuses. They love Kool-Aid, but only a particular way. Their Kool-Aid mixture should contain 5.5% sugar. If you had previously made 11 cups of Kool-Aid that contained 2% sugar and another batch of Kool-Aid that contained 8% sugar, how much of the second mixture would you have to add to the first mixture to obtain the 5.5% sugar mixture? How many cups:________________

7. You get paid $7.00 per genius. You did such a nice job that you also get a 15% tip. How much did you get to watch them? Now how much money do you have remaining?
Paid:__________________      Total: ____________

8. You are now feeling awfully generous and you decide to donate 23% of your remaining money to the math department in your local high school so the teachers could have calculators for everyone in their class. How much money did you donate? How much do you have remaining?
Donated:________________    Total: ____________

9. Finally you’re tired of spending money so you are going to prepare for retirement. You invest your remaining money into a great account gaining 17% in simple interest. If you leave it there for 40 years, how much total money will you have when you take it out in 2043?
Amount gained after 40 years:______________     Total: ____________