Wall Street Tycoon

Brian Smith
Wake Forest University

Introduction: Stock prices appear in the newspaper and scroll across the bottoms of our television screens every day. Occasionally they make front page headlines, and other days they are just a bunch of numbers printed on a page. In either case, almost all students have had some type of exposure to the stock market. This activity will help students not only learn how to apply and calculate percent change, but also make sense of numbers they will see for the rest of their lives. This activity is presented in two different forms. The first option is meant to take up one, 45-minute class period and the other is a series of 5 to 10 minute warm-ups over the course of six school days.

Course: Algebra I.

Materials: Worksheet, document camera, dice, coins and computers/newspapers.

NCTM Standards: Algebra, Communication, Connections, Representation, Problem Solving

NCSCOS: Algebra 1 – 1.02 Use formulas and algebraic expressions, including iterative and recursive forms, to model and solve problems


Objectives:
1. Students will be able to apply percent increases/decreases given a starting value and a percent.
2. Students will be able to find percent increases/decreases.

Activities:
- One day option
  - As a weekend homework assignment, have students bring in a stock price from a newspaper or the internet
    - Students will need to bring in the company name, stock symbol and stock price
    - Encourage students to bring an entire section of the newspaper to class
    - Have some stocks prepared in case students do not do this
    - Show students Google Finance and how they can look up stock prices there
  - Using the attached worksheet, simulate a week’s worth of stock activity in the following manner
    - Split groups up into groups of 3 or 4
Each group will be assigned a real-life stock with Monday’s actual closing price.

- Students will roll the dice.
- For each day, each group will roll a die and flip a coin to see whether the number they rolled will be an increase or decrease (heads increase, tails decrease).
- The stock will increase or decrease the number rolled on the die.
- Check that the previous day’s calculations are correct before you flip the coin for each group.
- Repeat this process for the entire week.
- Calculate their percent change for the entire week.

- Each group will present their results for the week for a grade orally and in writing (in order to receive credit, you must share at least some part of your group’s data).

- One week option
  - Same weekend homework assignment from one week option
  - Split students up into groups to decide which stock in which they are going to invest.
  - Once each group has decided on their stock, let each group know that part of their homework for the next night is to look up the percent change for their stock for Monday on the internet or in a newspaper.
    - Have the whole group find the stock which will be a good check to see if the students’ are finding the correct numbers.
    - Just in case, know all of the groups stocks and have the percent’s ready each morning.
  - Every morning, starting with Tuesday, have the groups find yesterday’s closing price as a warm-up.
    - Each group must turn in a short write-up of how their stock did the previous day and the new price of the stock.
    - Since each group has three or four people, a different student should do the write up each day.
    - Provide an example for the students on Tuesday using a stock of your choice.
  - On the following Monday morning, have the students bring in their stock’s percent change from Friday.
    - In addition to finding Friday’s closing price, have the student’s calculate their stock’s percent change for the week.
    - Show an example of this with your stock.
  - Once the students have done this, have each group present their stock’s performance from last week.
    - Have the groups explain each day before giving a summary for the week.
  - After the presentations, have the class vote on what stock they would invest in, based on last week’s performance.

**Assessment:** Daily write-ups on the group’s stock and final presentation. Make sure that students do not simply read chart out loud but provide reasons for their findings and make sense of their calculations.
## Wall Street Tycoon

<table>
<thead>
<tr>
<th>Day of the week</th>
<th>Stock Value Yesterday</th>
<th>Percent Change from Yesterday</th>
<th>Final Price for the Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thursday</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friday</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change for the week</td>
<td>Monday’s Price</td>
<td>Friday’s Price</td>
<td>Percent Change for the week</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Wall Street Tycoon
Example: Merck (MRK)

<table>
<thead>
<tr>
<th>Day of the week</th>
<th>Stock Value Yesterday</th>
<th>Percent Change from Yesterday</th>
<th>Final Price for the Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>N/A</td>
<td>N/A</td>
<td>36.52</td>
</tr>
<tr>
<td>Tuesday</td>
<td>36.52</td>
<td>+3%</td>
<td>37.62</td>
</tr>
<tr>
<td>Wednesday</td>
<td>37.62</td>
<td>-2%</td>
<td>36.87</td>
</tr>
<tr>
<td>Thursday</td>
<td>36.87</td>
<td>+1%</td>
<td>37.24</td>
</tr>
<tr>
<td>Friday</td>
<td>37.24</td>
<td>+6%</td>
<td>39.47</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Change for the week</th>
<th>Monday’s Price</th>
<th>Friday’s Price</th>
<th>Percent Change for the week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>36.52</td>
<td>39.47</td>
<td>8.1%</td>
</tr>
</tbody>
</table>
Wall Street Tycoon
Example: Merck (MRK) Daily Reports

Tuesday: Merck’s stock rose by three percent on Tuesday from 36.52 per share to 37.62 per share.

Wednesday: On Wednesday, Merck’s stock fell by two percent from 37.62 a share to 36.87 a share.

Thursday: Merck edged forward one percent moving from 36 dollars and 87 cents a share to 37 dollars and 24 cents a share.

Friday: Merck had a huge trading day on Friday jumping 6 percent from 37.24 per share to 39.47 per share.

Weekly Summary: Merck had a very successful week on Wall Street as its shareholders earned 8.1 percent. The value of its shares rose from 36 dollars and 52 cents a share to 39 dollars and 47 cents a share.