
# Gold Seal Lesson

| *Author(s):* *Susan Goss* | | | *Lesson Title:* *Signed Numbers and Checkbook Arithmetic* | | | |
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| *Grade Span* | | | *ICLE Application Model* | | | |
| *K-4* | *5-8* *X* | *9-12* | *A* | *B* *X* | *C* | *D* |

**Instructional Focus: these are the standards**

**Number Operation and Concepts**
Students use number, number sense, and number relationships in a problem-solving situation. Students communicate the reasoning used in solving these problems.

**Algebraic Concepts and Relationships**
Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation. Students evaluate and communicate the reasoning used in solving these problems.

**Statistics and Probability**
Students use statistics and probability to analyze given situations and the results of experiments. Students communicate the reasoning used in arriving at a conclusion.

**Performance Task**

The teacher will copy, using a check template, enough checks for about 10 per student. (Sometimes, the bank will donate these. Also, sometimes the bank will come to class and give a talk on how to use checkbooks.)

The teacher will also copy 2 pages of a checkbook registry for each student. (Again, these can be donated by a bank.)

Students will keep the registry and the checks in their folders to be used as a warm-up activity every day in the following ways:

1. When graded papers are returned to the students, their percent correct is put in the registry as a credit, ie. 80% = $80. These are positive integers. Add to balance

2. "Debits" are typed up, laminated, cut apart and put into the "debit box.." After all papers are returned and appropriate credits made, the box is passed around the room. The box contains things that can happen to the student that would cause him/her to spend, i.e. Late fee at the library = .25, lunch = 1.50, etc. These are negative integers. Subtract from balance

3. Graph today's balance on a scatter plot to watch spending/saving.

4. Each week, find the mean amount earned; mean amount spent

5. At the end of each unit, the students may spend their money on things in the store.

**ICLE Essential Skills**

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| Perform operations with signed (positive and negative) numbers, including decimals, ratios, percents, and fractions. (m1) |
| Understand basic algebraic properties (i.e., commutative: ab = ba; associative: ab(c) = a(bc); and distributive: a(b+c) = (ab)+(ac)).(m3) |
| Understand the best procedures for statistical data collection, organization, and display including making estimates and predictions and drawing inferences. (m 5) |
| Understand the correct order of operations for performing algebraic computations. (m8) |
| Understand the characteristics of measures of central tendency (i.e., mean, median, and mode). (m15) |

**Scoring Guide: CHECK LIST**

Answer each of the following questions yes or no.

1. Did the students correctly add wages every day? YES NO
2. Did the students correctly subtract bills every day? YES NO
3. Did the students keep a running balance? YES NO
4. Did the students find weekly mean of debits and credits? YES NO
5. Did the students chart daily balance on a scatter plot? YES NO

5 correct = A 4 correct = B 3 correct = C 2 correct = D

**Keywords**

| English Language Arts | Mathematics | Science |
|---|---|---|
| **Reading** | **Algebra**<br>**Computation**<br>**Graphs**<br>**Math in Daily Life**<br>**Problem Solving**<br>**Signed numbers** | **Earth Science** |
| **Writing** | **Geometry** | **Life Science** |
| **Communications** | **Statistics**<br>**Data Analysis** **Plots**<br>**Data Collection** **Graphs**<br>**Data Display** **Central Tendency**<br>**Statistics in Daily Life** | **Chemistry** |
| **Literature** | **Calculus** | **Physics** |
| **Other** | **Trigonometry** | **Other** |
| | **Other** | |