Dollars and Sense

Stay in the Black: Saving and Spending

Economics, Mathematics and System Dynamics Standards

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All 7 lessons, including simulations, of *Dollars and Sense* as well as the book with simulations on a CD are available from the Creative Learning Exchange.
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Lesson	Math Standards (NCTM)	Economics Standards (CEE)	System Dynamics Objectives (CLE)
Lesson 1: **Can I Manage My Money and My Music?** Saving for a GOAL (an mp3 player and tunes), and spending "wisely" to make that savings last. ***Lesson 2:*** **Can I Reach a Personal Saving and Spending Goal?** Pursuing saving and spending PLANS to reach a personal goal. ***Lesson 3:*** **Can I Make Money with a Lemonade Stand?** Running a business, with income, expenditures, and profit. ***Lesson 4:*** **Can I Successfully Run the Local Food Bank?** A non-profit maximizing the "good" it does (rather than profits!) while needing to be sustainable. ***Lesson 5:*** **Can I Help a Responsible Teen Buy a Car?** Role of "trade-offs" (short-term vs. long-term gratification, sacrificing free time for work) to pursue a "big" financial goal. ***Lesson 6:*** **How Does Interest Grow My Savings?** Introducing the "miracle" of compound interest and its power for generating long-term savings. ***Lesson 7:*** **Can Compounding Interest Make Me a Millionaire?** Putting all of the pieces together—saving, spending, and earning interest—to see if an "average" person can become a millionaire!	**CONTENT STANDARDS** **Number and Operations** • Understand meanings of operations and how they relate to one another. **Algebra** (includes some Grade 6–8 standards) • Understand patterns, relations, and functions. • Use mathematical models to represent and understand quantitative relationships. • Analyze change in various contexts. **Data Analysis and Probability** • Formulate questions that can be addressed with data; collect, organize, and display relevant data to answer questions. • Develop and evaluate inferences and predictions that are based on data. **PROCESS STANDARDS** **Problem Solving**: Build new mathematical knowledge; apply/adapt a variety of strategies to solve problems; reflect on process. **Reasoning and Proof**: Make/ investigate mathematical conjectures; develop/evaluate mathematical arguments; use various types of reasoning and methods of proof. **Communication**: Organize and consolidate thinking; communicate coherently and clearly to peers, teachers, and others; analyze and evaluate thinking/strategies of others. **Connections**: Recognize and use connections among mathematical ideas; recognize and apply mathematics in contexts outside of mathematics. **Representation**: Create/use representations to organize, record, and communicate mathematical ideas and to model and interpret physical, social, and mathematical phenomena.	**Standard 1**: Students will identify what they gain and what they give up when they make choices. **Standard 2**: Students will make effective decisions as consumers, producers, savers, investors, and citizens. **Standard 3**: Students will evaluate methods of allocating goods and services, by comparing the benefits and costs of each method. **Standard 4**: Students will identify incentives that affect people's behavior and explain how incentives affect their own behavior. **Standard 8**: Students will predict how prices change when the number of buyers or sellers in a market changes. **Standard 12**: Students will explain situations in which they pay or receive interest. **Standard 13**: Students will predict future earnings.	1. Systems are dynamic, meaning that they are characterized by change over time (familiarity with Behavior-over-Time Graphs). 2. Dynamics in systems are a result of the interaction of stocks and flows (ability to create a simple one-stock stock/flow diagram). 3. Altering inflows and outflows can create many patterns of change in stocks (understanding different graph patterns and the underlying data and dynamics to which they are linked). 4. Inflows and/or outflows are controlled in many ways to achieve a desired size of stock (ability to manipulate a simple one-stock model to achieve desired outcomes). 5. Reinforcing feedback loops (e.g., compound interest) are powerful and often non-intuitive in their effects (familiarity with the concept of reinforcing feedback and how it influences stocks and flows).