Dollars and Sense II

Our Interest in Interest

Economics, Mathematics and System Dynamics Standards

Jeff Potash and the Creative Learning Exchange

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All 8 lessons, including simulations, of *Dollars and Sense: Our Interest in Interest* 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 (Council on Economic Education)	System Dynamics Objectives (Creative Learning Exchange)
Lesson 1: **Can Compound Interest Work For Me?** Discovering the "power" of compounding savings. *Lesson 2:* **How Can I Maximize Savings While Spending?** Pursuing saving and spending PLANS to reach a personal goal *Lesson 3:* **How Does a Credit Card Work?** An introduction to how Credit Card companies maximize their interest. *Lesson 4:* **Borrowing on Time (Installment Loans)** An introduction to auto, personal, and mortgage loans of varying durations *Lesson 5:* **Managing Credit With Savings and Spending** Placing Credit Card use in the larger context of personal finance saving and spending goals. *Lesson 6:* **Compounding Questions for Installment Loans** Exploring how changing value and income influence the "cost" of using installment loans. *Lesson 7:* **Dear Susie…Can You Help Others?** Students help others address looming financial catastrophes. *Lesson 8:* **Can You Manage Your Financial Interests?** Students seek to balance loans, debt, income and spending with Savings goals.	<u>**CONTENT STANDARDS**</u> **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. <u>**PROCESS STANDARDS**</u> **Problem Solving**: Build new mathematical knowledge; apply/adapt 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 (Scarcity)**: *Students will identify what they gain and what they give up when they make choices.* **Standard 2 (Decision-Making)**: *Students will make effective decisions as consumers, producers, savers, investors, and citizens.* **Standard 3 (Allocation)**: *Students will evaluate methods of allocating goods and services, by comparing the benefits and costs of each method.* **Standard 4 (Incentives)**: *Students will identify incentives that affect people's behavior and explain how incentives affect their own behavior.* **Standard 12 (Interest Rates)**: *Students will explain situations in which they pay or receive interest.* **Standard 13 (Income)**: *Students will predict future earnings, based on their current plans for education, training, and career options.*	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 in-flows and out-flows can create many patterns of change in stocks (understanding different graph patterns and the underlying data and dynamics to which they are linked). 4. In-flows and/or out-flows 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).