

Put *life*
Into Algebra

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Mixed Nuts

Trevor is 5 years more than half his mother's age when he boards a train leaving Los Angeles. He is traveling south on a train numbered with a tens digit that is 4 more than twice the ones digit at the same time another train leaves San Diego heading north and carrying mixed nuts. If he needs 50 pounds of mix that is 25% cashew and the entire task takes him 20 minutes by himself, how much longer will it take if he gets help from Celina who has 40 coins and needs a box that is 7 cm longer than 3 times the width so she can invest part of the money at 6% and earn interest of \$22.50. How old is Trevor?

Put Life Into Algebra

- Birthday Party
- Silkscreen T-shirts
- Health Club
- Carnival Rides
- College Tuition
- Cell Phone Plans
- Below Budget
- World Records

California Math Framework

March, 2005

Goals for students to achieve are as follows....

- 4. Make connections among mathematical ideas and between mathematics and other disciplines.**
- 5. Apply mathematics to everyday life and develop an interest in pursuing advanced studies in mathematics and in a wide array of mathematically-related career choices.**

pp. 2, 3.

California Math Framework

March, 2005

“Students may sometimes learn a skill more readily when they know how it will be used and they are intrigued by a problem that requires the skill.” p. 6.

“Schools that use these standards ‘enroll’ students in a mathematical apprenticeship in which they practice skills, solve problems, apply mathematics in the real world, develop a capacity for abstract thinking,...” p. 16.

What's Math Got to Do With It?

Jo Boaler, 2008.

“My argument against pseudo contexts does not mean that contexts should not be used in mathematics examples; they can be extremely powerful. But they should only be used when they are realistic and when the contexts offer something to the students, such as increasing their interest or modeling a mathematical concept.” p. 53.

What's Math Got to Do With It?

Jo Boaler, 2008.

“The elimination of ridiculous contexts would be good for many reasons. Most importantly, students would realize that they are learning an important subject that helps make sense of the world, rather than a subject that is all about mystification and nonsense.” p. 55.

Put *life* Into Algebra

- Mixed Nuts and Life
- What's the Difference?
- Carnival Rides
- Text Messages
- Market Night and Snow Cones
- Put Life Into *Your* Algebra
- Modeling Life and Meeting Standards

What's the Difference?

- Meaningful approach to introducing algebra concepts and skills. (*The traditional approach delays meaning to the end of the section, chapter or course.*)
- Skills and vocabulary are presented in context whenever possible.

Carnival Rides

- **Good Questions**
- **Representations**
Table, Graph, Function,
Equation, Arrow
- **Vocabulary**
- **Standards**
- **Extensions**

Carnival Rides

The cost for admission at the County Fair is \$9.00 for an adult. Ride tickets sell for \$0.50 each. Each ride requires seven tickets.

Monthly Text Plans

Plan 1

\$5.00 for 250.

\$0.15 per text message

\$20.00 for unlimited

Plan 2

\$5.00 for 300.

\$0.20 per text message

\$15.00 for unlimited.

Snow Cones

Space Rental = \$50.00

Selling Price = \$2.50

Ice = \$1.99 for 20 lbs.

Cups = \$9.00 for 200

Syrup = \$6.50 per qt.

Snow Cone = 12 oz. crushed ice + 2 oz. syrup

Put *life* Into *Your* Algebra

- **Traditional Textbook**
 - **Begin with application problem.**
 - **Teach skills within and apart from the context.**
 - **Return to the application problem.**
 - **Extend to other problems and contexts.**
- **Not Enough Time**
 - **Layer and spiral the skills.**
 - **Develop and build over time.**

Modeling Life and California Algebra Standards

- **Solving linear equations (4.0)**
- **Solving multi-step equations (5.0)**
- **Graphing linear equations (6.0)**
- **Writing equations using point/slope (7.0)**
- **Solving systems of equations (9.0)**
- **Relations and functions (16.0, 19.0)**
- **Domain and range (17.0)**