Pennies minted before 1982 weigh approximately 3g and are made primarily of copper. Pennies minted after 1982 weigh approximately 2.5g and are made more of zinc.

I have 14 pennies in a 'bag'.

How many of each type are there?

Available equipment – plastic scale and container of dominoes

(We know dominoes are approximately 2.885g each)
Your school’s band decides to sell cookie dough kits to raise money for a spring field trip. There is a Family Times Cookie Dough kit that you can buy for $7 and sell for $12, and a Baker’s Delight kit that you can buy for $15 and sell for $25. The PTA will lend you $2100 to buy supplies. The company selling you the kits informs you that a school your size can expect to sell at most 220 kits.

**How many of each type of kit should your band purchase to raise the most money?**

**What is the most money that your band can raise?**
Math in Context in Finite Math

- Begin chapter with application problem
- Students draw out their own knowledge
- Piece together recollections and strategies until application is complete

- Assign a second application
- Define key terms on review
- Lial, 11th edition
What’s the Point: Personal Notes

- Working through the entire application first allows students to assess their own deficiencies up front.
- Once established, each individual can identify pertinent personal resources and game plan their time.
- The students work together to extend past relevant applications to the next level of thinking.
Observable Changes

- Attendance is nearly perfect
- Quiz time allotment has decreased
  - 25min to 15min for 7 questions
  - Time for more examples
- Exams are completed in a 50min class!
- Student camaraderie has markedly increased
Quantifiable Results

Pre-Experiment

2015-2016 Grade Results

<table>
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<th>Quizzes</th>
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Experiment

2017-2018 Grade Results

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Finite Math Class Demographics
Joliet Junior College

- Prerequisite: College Algebra
- Students’ Majors: Business, Agriculture, other ‘shoppers’

Joliet Junior College Fast Facts
- 14726 students
  - 32% full time
- 55% female
- 42% minority
  - 28% Hispanic
- 23 average age
Common Core State Standards Correlated to Mathematics in Context

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.
“Personalized learning is designed to accelerate student learning by tailoring instruction to individuals’ needs and skills as they go about fulfilling curricular requirements.” (Kallick and Zmuda, 2017)

“Both teachers and students agree that the use of values clarification techniques contributes to making the learning environment more enjoyable and motivating.” (Lisievici, 2016)