

Who we are

Fellow: Simon Stump is a 5th year PhD student in Ecology & Evolutionary Biology. His dissertation uses mathematical models to understand how plants can coexist.

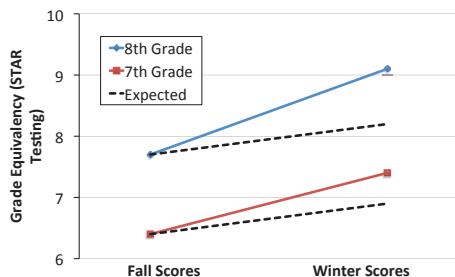
Teacher: Jenifer Martin has been teaching ten years. She recently received her master's degree in Middle School Mathematics Teaching and Leadership. Her action research project was on contextualized mathematics.

Goals

- 1) Help struggling students attain grade-level competency by giving them more opportunities for individual tutoring or tutoring in small groups.
- 2) Help all students understand math on an intuitive level, through the use of contextualized lessons.

Individual Tutoring

Many students in each class did not begin the year at the skill level expected in a 7th or 8th grader. To address this, Simon has spent many classes working with small groups of 1-7 struggling students, while Jenifer works with the rest of the class. This year, students have on average improved by least 1 grade level since the year began.



Contextualized Math

Literature suggests that transfer of information works better if students learn math within the context of real-world situations. We developed lessons to bring science into math class.

Root Beer Floats & Solving Inequalities

Objective: Practice solving inequalities and estimation.

Question: You are selling root-beer floats to raise money for a club. How much do you need to charge to make a profit?

Activity:

Selling ice cream floats

- Assignment: You want to try to sell root-beer floats to raise money.
- Figure your costs, estimate how many you can sell, and calculate the price in order to make a profit.



Photo by Arnold Garfias
Retrieved from Wikipedia

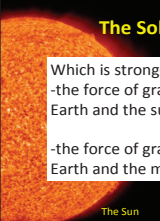
The Moon & The Sun

Objective: Work with scientific notation and data gathering skills.

Activity: Students were given the equation for gravity, and some of the relevant constants. They were given iPads to find the unknown constants needed to solve the question.

The Solar System

Which is stronger:
-the force of gravity between the Earth and the sun?
or
-the force of gravity between the Earth and the moon?




The Sun **The Moon**

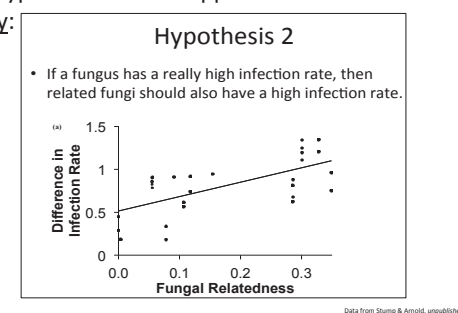
Photos by NASA
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Scatterplots & Panamanian Fungi

Objective: Learn the basic terminology for scatterplots, and use it to analyze hypotheses.

Question: Last summer, Mr. Stump studied parasitic fungi in the jungles of Panama. Which of his hypotheses were supported?

Activity:



Exponential Population Growth

Objective: Learn about exponential growth, and how to model biological populations.

Question: How many geckos, chollas, or Tucsonans will there be in the future?

Activity:

