

Simulations in Excel: The Amazing Power of a Simple Tool

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For an abundance of prebuilt simulations (>150 spreadsheets) in Excel, some aspects of mathematical modeling, and instructions for building them:

See the Developer's Guide to Excelets website: <http://academic.pgcc.edu/~ssinex/excelets>

Easier way – Google or Bing - excelets

Modeling on the first day of class

Measuring the Stack Height of Nested Styrofoam Cups ("Just add data" Excel)

http://academic.pgcc.edu/~ssinex/excelets/stacking_cups.xls

Using the stack of cups provided and the centimeter ruler measure the height to the nearest 0.1 cm (1 mm) and enter the value to the spreadsheet. We will pool the group data!

What is the mathematical model or equation describing?

Pittsburgh Supercomputing Center Computation and Science for Teachers (CAST) Program

The CAST Professional Development Program is an integrated set of modules to train teachers on how to incorporate computational reasoning and tools such as modeling and simulation into their middle and high school math and science curriculum.

<http://www.psc.edu/eot/k12/2011yr.php>

Building a simple simulation

Let's construct the simulation of the behavior of the quadratic equation: $y = ax^2 + bx + c$

Exploring the Family of Quadratic Functions - <http://academic.pgcc.edu/~ssinex/excelets/quadratics.xls>

Handout with instructions - http://academic.pgcc.edu/~ssinex/excelets/Excelets_MCTM.pdf