

CAST Modules - Modeling Tools

Question	Spreadsheets such as Microsoft Excel or Open Office Calc	Systems tools such as Stella or Vensim	Agent-based tools such as Agent Sheets or NetLogo
What can the tool accomplish?	Data handling, analysis, and graphing; modeling of data and simulations; some concept animation	Time-dependent models and simulations; can generate data	Interaction of agents or agent behavior and simulations; can generate data; concept animation
How are models generated?	Computations using mathematical relationships by writing formulas (no programming)	Computations using a "concept-oriented map" (stock and flow) process; mathematics is camouflaged	Probability-based rules; programming in NetLogo
	Can handle time-dependent models using difference equations; Euler numerical method easiest	Better numerical methods are available (less error)	Random nature of processes introduced
	Macroscopic behavior	Macroscopic behavior	Microscopic behavior
How are results displayed?	Graphical and tabular display	Graphical and tabular display	Graphical and tabular display and agent behavior
Is there a cost involved?	Excel - \$	Stella - \$	Agent Sheets - \$50
	Open Office Calc - freeware	Vensim - free for educators	NetLogo - freeware
General Comments	Open Office Calc runs most Excel stuff with no problems (some cosmetic clean up)	Vensim will run off jumpdrive/CD without installation; Many prebuilt Stella models available	Agent Sheets can be converted to Java applets to run on webpage; Many pre-built NetLogo models available

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Where can I go to look at examples?	<p>Excelets at http://academic.pgcc.edu/~ssinex/excelets</p> <p>(Excelets will function in both Mac and PC environments, and most will function 100% in OpenOffice Calc http://www.openoffice.org/)</p>	<p>CoreModeling Program (Stella) at MVHS at http://mvhs.shodor.org/</p> <p>Load free player from ISEE to run Stella models at http://www.iseesystems.com/software/player/iseeplayer.aspx</p>	<p>NetLogo models library at http://ccl.northwestern.edu/netlogo/models</p> <p>(can view as Java applets too!)</p>