**What is NetLogo?**

**NetLogo** is a programmable modelling environment for simulating natural social phenomena. It was authored by Uri Wilensky in 1999 and has been in continuous development ever since a the Center for Connected Learning and Computer-Based Modelling.

**NetLogo** is particularly well suited for modelling complex systems developing over time. Modelers can give instructions to hundreds or thousands of “agents” all operating independently. This makes it possible to explore the connection between the micro-level behaviour of individuals and the macro-level patterns that emerge from their interaction.

**NetLogo** lets students open simulations and “play” with them, exploring their behaviour under various conditions. It is also an authoring environment which enables students, teachers and curriculum developers to create their own models. NetLogo is simple enough for students and teachers, yet advanced enough to serve as a powerful tool for researchers in many fields.

**NetLogo** has extensive documentation and tutorials. It also comes with the Models Library, a large collection of pre-written simulations that can be used and modifies. These simulations address content areas in the natural and social sciences including biology and medicine, physics and chemistry. Several model-based inquiry curricula using NetLogo are available and more are under development.

**NetLogo** is the next generation of the series of multi-agent modelling languages including StarLogo and StarLogoT. NetLogo runs on the Java Virtual Machine, so it works on all major platforms (Mac, Windows, Linux.) It runs as a desktop application. Command line operation is also supported.

**Features**

* **System:**
  + Free, open source
  + Cross-platform: runs on Mac, Windows, Linux et al
  + International character set support
* **Programming:**
  + Fully programmable
  + Approachable syntax
  + Language is Logo dialect extended to support agents
  + Mobile agents (turtles) move over a grid of stationary agents (patches)
  + Link agents connect turtles to make networks, graphs, and aggregates
  + Large vocabulary of built-in language primitives
  + Double precision floating point math
  + First-class function values (aka anonymous procedures, closures, lambda)
  + Runs are reproducible cross-platform
* **Environment:**
  + Command centre for on-the-fly interaction
  + Interface builder w/ buttons, sliders, switches, choosers, monitors, text boxes, notes, output area
  + Info tab for annotating your model with formatted text and images
  + HubNet: participatory simulations using networked devices
  + Agent monitors for inspecting and controlling agents
  + Export and import functions (export data, save and restore state of model, make a movie)
  + BehavioSpace, an open source tool used to collect data from multiple parallel runs of a model
  + System Dynamics Modeler
  + NetLogo 3D for modelling 3D worlds
  + Headless mode allows doing batch runs from the command line
* **Display and visualization:**
  + Line, bar, and scatter plots
  + Speed slider lets you fast forward your model or see it in slow motion
  + View your model in either 2D or 3D
  + Scalable and rotatable vector shapes
  + Turtle and patch labels
* **APIs:**
  + Controlling API allows embedding NetLogo in a script or application
  + Extensions API allows adding new commands and reporters to the NetLogo language; open source example extensions are included