Introduction to Programming Concepts

Basic Ideas:

1. Variable names
2. Assignment
3. Iteration
4. Recursion
5. Controls
6. Visualization
7. Conditions and Branching

One method of learning is to learn each skill, practice it, then apply it. Examples?

Use a “sandbox” approach, where you can learn specific skills without “fear” of harm.

Using Excel as a computational “sandbox”. Developer mode.

Simple Pet Model

1. Variables
2. Assignment
3. Control

Simple Time model with control, Functions of time

Diffusion Model

1. Averaging Neighbors:
   1. Define absolutely correctly for one cell
   2. “Spread” the definition to all cells in one column
   3. “Spread” the column definition to many columns
2. Iteration, Restart, Initialization: Iteration option
3. Visualization
4. Multiple models