

# Introduction to Agent-Based Modeling

Combining Hofstadter and McCoy Models

## *A Practical Guide to Building Models in Netlogo*

### Loops of Various Sorts

- **foreach** Is Mostly Useless! Only Good for Lists of Numbers
- **while** Is Very Useful for Conditional Behavior and Can Simulate a Standard “for loop” from Other Languages

```
let index 0
while [index < population] [
  ask one-of patches [sprout 1 [] ]
  set index index + 1
]
```

```
ask turtles [
  while [any? other-turtles-here] [
    rt random 90 - 45
    fd random-float 2
  ]
]
```

- **repeat** Is Also Good if the Number of Iterations Is FIXED

```
repeat iterations [
  ask one-of turtles [
    rt random 90 - 45
    fd random-float 2
    set color color + 1
  ]
]
```

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### **Other Especially Useful Bits of Code**

- To Load a Background Image or Data File or to Run Code at **Startup** see Earth Science → **Grand Canyon**
- To Click and Drag Agents, Draw Paths for Agents, and Other Mouse Interactions see Code Examples → **Mouse...**
- To Record a **Movie** of Your Model Running see Code Example
- See Art → unverified → **Sound Machines** to Make Sound Effects and Other Sonic Interaction
- If You're Bored Check Out **PacMan** (Including a Level Editor), **Frogger**, **Tetris**, or Make Your Own Game!