

First and Last Name

Period #

Forest Fire Computational Thinking Patterns (CTPs) and Success Criteria (SC)

Evaluators: 1.

2.

Agents Involved	Interaction Description	CTP Names
Tree (healthy, burning, and burnt)	If I am a healthy tree and I am next to at least one burning tree with probability I will catch on fire. If I am a burning tree with a certain probability I will change to a burnt tree.	Collision
Tree and Controller	I am the Controller and I will send messages to all healthy Trees to check if they are next to any burning tree. If yes, then the healthy tree will change to a burning tree with probability. Synchronization	Perceive and Act
Trees, Controller, and Ground	I am the Controller and I will send messages to the Trees to delete themselves and to the ground to make trees based upon a desired probability when the Hand Tool clicks on me.	Absorb and Generate

Success Criteria for the Forest Fire Simulation:

1. Create Tree agent with burning and burnt depictions added, Background agent, Controller agent, and Start Here agent.
2. Create a worksheet and layout the above agents on it.
3. Program the Tree for **Collision**:
 - a. Program the Tree to burn with probability.
 - b. Program the Tree to change to a Burnt/Dead Tree with probability.
4. Program the Controller and the Tree to **Perceive and Act**.
5. Regenerate the forest (**Absorb** and **Generate**).
6. Setup the Simulation Properties.

Advanced:

- Import the sim into AgentCubes and develop it for 3D use.
- Program wind in the sim.
- Extra worksheets that might include firefighters, aircraft, and/or water from clouds. The firefighters could dig fire lines. The aircraft could drop water or let firefighters parachute in as Hot Shots.