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

#### Evaluator:

1. 

2. 

<table>
<thead>
<tr>
<th>Agents Involved</th>
<th>Interaction Description</th>
<th>CTP Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree (healthy, burning, and burnt)</td>
<td>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.</td>
<td>Collision</td>
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<tr>
<td>Tree and Controller</td>
<td>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.</td>
<td>Perceive and Act</td>
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<tr>
<td>Trees, Controller, and Ground</td>
<td>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.</td>
<td>Absorb and Generate</td>
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</tbody>
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### 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**:
   - Program the Tree to burn with probability.
   - 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**).  

**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.