

Answer Key to Handout M06-2. Tinker Tree Model vs. Reality

Question 1. List at least 3 changes you would make to your Tinker Tree or surface fuels to increase the tree's chances of surviving a surface fire. Explain why you would make each change. **Assess changes individually.**

Question 2. List at least 3 ways in which the Tinker Tree model does not resemble a real tree. Here are some examples of model shortcomings:

- Tinker tree's metal trunk cannot be damaged by fire.
- Tinker tree is two-dimensional (has foliage only on 2 sides of trunk).
- Foliage is not alive, so it has no moisture and is not changing with the seasons.
- Tinker tree has no roots that could be damaged by fire.
- Tinker tree does not grow taller, gain new branches, or shed old ones as years go by and succession occurs.

Question 3. Write a paragraph that answers these questions. Use the following terms correctly in your explanation: surface fire, crown fire, ladder fuels, stand density.

- How are the fuels in "A" different from those in "B"? A has more **surface fuels**, larger **surface fuels**, more **ladder fuels**, and more closely-spaced tree crowns than B.
- How are the different fuels likely to affect the kind of fire that would occur there on a dry, windy day? Thus A is more likely to have a **crown fire** on a dry, windy day than B. B is likely to have only **surface fire**.
- How is the stand density (which was covered in the last activity – Matchstick Forests – likely to affect the kind of fire that would occur there on a dry, windy day? Fire can move from one crown to another the forest with higher **stand density** (A). However, B is more open than A (i.e., lower stand density), so the wind at the ground surface is likely to be stronger and thus surface fire is likely to spread faster in B than in A.

Here is an additional idea not covered in this activity: Because of its heavy fuels, A is more likely to have a very severe surface fire than B – which could kill the trees even without burning their crowns.