Wildfire Behavior Lab - Teacher Information

The relationships between fuels, weather, and topography during a wildfire are complex. While simple conclusions may not be obvious, this activity should give students an introduction to the interactions between the three legs of the Wildfire Behavior Triangle and help build an understanding of the factors that firefighters and fire scientists consider.

In this lab, students brainstorm methods and materials to test each of the three legs of the triangle.

- Weather – fan (wind), sprayer bottle (rain)
- Topography – slope, breaks in the forest
- Fuels – wet wood, dry wood, wet leaf litter, dry leaf litter, metals, other non-toxic possibilities that may or may not burn.

Students create models of forests or other ecosystems and test their hypotheses/research questions with these model systems. If students cannot come up with their own testable research questions, here are a few possibilities that may be helpful.

- Will a fire burn move faster uphill or downhill?
- Will rolling topography slow a fire?
- How large a break in the forest will stop or slow a fire?
- Will temperature make a measurable impact on rate of spread?
- How will wind change the rate and dynamic of a fire? (be very careful with this one, as the potential is great for a fire to get out of hand)
- Which types of fuels will burn fastest?
- How much longer will it take a wet tree to burn than a dry snag?

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