HANDS-ON ACTIVITY

Simulating Fire in a Forest Ecosystem

In this activity, you will use a simulation to test a solution that could mitigate, or lessen, the impacts of a forest fire on biodiversity. After exploring the simulation and testing your solution, you will suggest revisions to this simulation that better address the issues of forest fires and biodiversity.

PROCEDURE

1. Use a search engine to search for "wildfire" and "simulator." Follow your teacher's instructions to access an available simulation.

2. Explore the simulation to become familiar with its inputs and outputs and to learn about the simulation, its parameters, and how it can be used.

3. Develop a plan to reduce the impact of forest fires on biodiversity. Your plan should work within the limitations of this simulation. For example, you could attempt to keep the size of the fire to a certain range by changing the amount of fuel moisture content to simulate the amount of living, dormant, or dead fuel materials in the forest. You could also research a specific species to learn how it has been affected by wildfires.

4. Refine your plan for a specific approach to address the impact of forest fires on biodiversity based on your research and planning.

5. Test your plan and record the outcomes.

6. Optimize your plan based on the results of your test.

DESIGN A SOLUTION

1. Describe your proposed plan. Include the following information in your description:
   - the parameter(s) that you intend to change, how you will change them, and what the expected outcome is.
   - your reasoning for this solution. Describe any research or statistics that led you to use this approach, citing the sources for your evidence.

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2. Describe the outcome of the solution you tested. Include specific values and data points.

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3. Describe the revisions you would make to this simulation. Address the following points.

- Explain how you would change this simulation so that it would account for more factors related to forest fires. What would you add or change, and why?

- Explain how you would change this simulation so that it would account for more factors related to biodiversity. What would you add or change, and why?

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