Name_____ Period _____ Date _____

Data Analytics STEM Sims

Lesson 2: Making a Tree

A decision tree is a tool used to help people make decisions regarding questions of importance. These trees consist of nodes and branches. How can you use a decision tree to represent tabular data and the tree's results to help you make a decision?

Doing the Science

1. Start the Data Analytics Simulation by clicking on the "Sim" tab.
2. Choose Data Set 1.
3. Note the data appearing in the Data Table at the left-hand corner of the screen.
4. Click and drag the "Rain" icon onto the board area to the right. You're interested in modeling the data in the first row of the table data.
5. Since the choice under "Rain" in the first row is "Yes," drag a "Yes" branch onto the "Rain" icon on the board.
6. Next, drag a "Land" icon onto the "Yes" branch you just placed. Since the choice under "Land" in the first row is "Yes," drag a "Yes" branch onto the "Land" icon on the board.
7. Next, drag a "Wind" icon onto the "Yes" branch you just placed. Since the choice under "Wind" in the first row is "Yes," drag a "Yes" branch onto the "Wind" icon on the board.
8. Complete the same process to make the decision tree for the data in the other three rows on the data table.
9. The decision tree you created was to help a hospital administrator decide whether or not to evacuate the patients from the hospital in advance of an impending strike from a hurricane. The hospital's policy was to evacuate if at least two of the three choices indicated "Yes" responses.
10. Answer the questions below based on the results of your decision tree.

Do You Understand?

1. Should the hospital be evacuated if there is abundant rain, but the hurricane has not yet made landfall and there are no strong winds?

2. How did your decision tree help you answer the previous question?

3. Lesson 1, called Heads or Tails, involved using the outcome of the flip of a coin to make an important decision. Discuss how the use of a decision tree is better than (or worse than) using the coin-flip method to help make decisions.