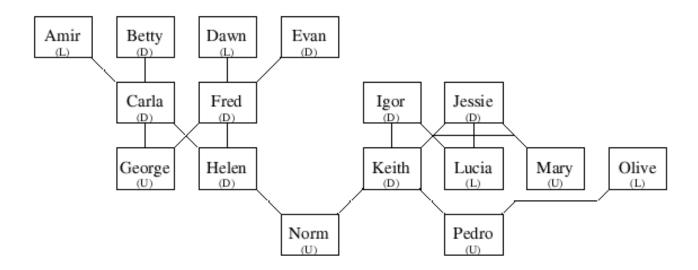
## "Struck by Lightning" Supplementary Materials

## Group Exercise about Genetics

Working cooperatively with your group, consider the following questions.

Examine the following family tree. The lines indicate parentage, with children below their parents. (L) indicates a person with Light-coloured eyes, while (D) indicates a person with Dark-coloured eyes, and (U) indicates a person of unknown eye colour (e.g. perhaps they are yet to be born). Of course, each (L) person must have Light-Light genes, but the genes of the (D) and (U) people are unknown.



- 1. Explain why each person with Light-coloured eyes (L) must have Light-Light genes.
- 2. For each person with Dark-coloured eyes (D), except for Betty and Evan, compute the probability that their genes are Dark-Dark versus Light-Dark. Why are Betty and Evan excluded?
- **3.** For each person with unknown eye colour (U), compute the probability that their genes are Dark-Dark versus Light-Dark versus Light-Light, and the probability that they will have light-coloured eyes.

Then, if you have time, then separately for each person in your group:

4. Draw a family tree for the group member, including whatever relatives eye colours are known, and also including a made-up group member's fictional spouse and fictional child. (If you want, you can also make up other relatives to make it more interesting.) Then, fill in everyone's probabilities for Light-Light, Light-Dark, and Dark-Dark genes as best as you can.