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Genetic Reproduction Patterns of Mice

For my project, I was testing the genetic patterns when reproducing different colored mice. I was breeding mice with different fur and eye colors to record any patterns in the offspring. I hypothesized the black and black combination would have black offspring with black eyes, the white and white combination would have white offspring with red eyes, and the black and white combination would have mixed black and white offspring with black and red eyes.

I mated a black female with a black male, a white female with a white male, a black female with a white male, and a black male with a white male. To mate the mice, I placed a male and female in a cage together for 14 days then removed the male to ensure the safety of the offspring. After around 25 days, the females gave birth. Once the offspring grew in their full coats of fur and opened their eyes, I noted the colors of eyes and fur.

I found that the combination of a black female with a white male produced offspring with grey, white and black fur. The combination of a white female with a black male produced offspring with a mixture of black and white fur. The white and white combination produced all white offspring. The black and black combination produced black and brown offspring.

My results lead to the conclusion that recessive and dominant genes can produce offspring with a different fur pigment than the original parents mice. All the genes in the parent mice could not be identified primarily on the color of the mice's fur and eye color.