Name Date Class

MiniLab 12.1

Analyzing Information

Illustrating a Pedigree

The pedigree method of studying a trait in a family uses records of phenotypes extending for two or more generations. Studies of pedigrees can be used to yield a great deal of genetic information about a related group.

Procedure

1. Working with a partner, choose one human trait, such as attached and free-hanging earlobes or tongue rolling, that interests both of you.
2. Using either your or your partner's family, collect information about your chosen trait. Include whether each individual is male or female, does or does not have the trait, and the relationship of the individual to others in the family.
3. Use your information to draw a pedigree for the trait.
4. Try to determine how your trait is inherited.

Analysis

1. What trait did you study? Can you determine from your pedigree what the apparent inheritance pattern of the trait is?

2. How is the study of inheritance patterns limited by pedigree analysis?

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Name Date Class

MiniLab 12.2

Observing and Inferring

Detecting Colors and Patterns in Eyes

Human eye color, like skin color, is determined by polygenic inheritance. You can detect several shades of eye color, especially if you look closely at the iris with a magnifying glass. Often, the pigment is deposited so that light reflects from the eye, causing the iris to appear blue, green, gray, or hazel (brown-green). In actuality, the pigment may be yellowish or brown, but not blue.

Procedure

CAUTION: ***Do not touch the eye with the magnifying glass or any other object.***

1. Use a magnifying glass to observe the patterns and colors of pigment in the eyes of five classmates.
2. Use colored pencils to make drawings of the five irises.
3. Describe your observations in your journal.

Analysis

1. How many different pigments were you able to detect in each eye?

2. From your data, do you suspect that eye color might not be inherited by simple Mendelian rules? Explain.

3. Suppose that two people have brown eyes. They have two children with brown eyes, one with blue eyes, and one with green eyes. What pattern might this suggest?

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