Quick Lab

Interpreting Information in a Pedigree

Organizing information is often the key to solving a problem. Tracing the hereditary characteristics over many generations can be confusing unless the information is well organized. In this lab, you will learn how to organize hereditary information, making it much easier to analyze.
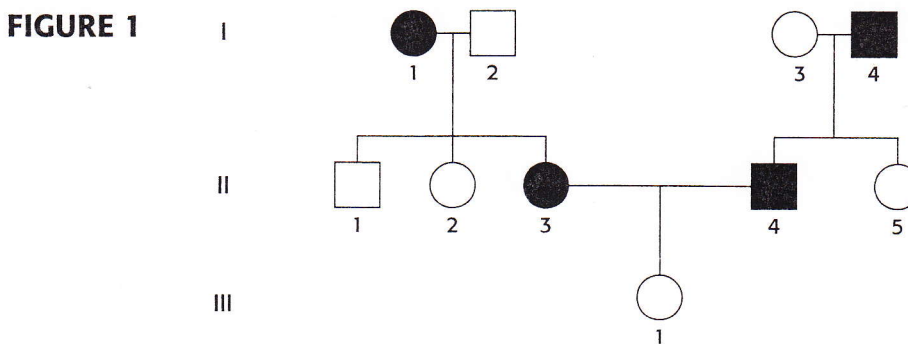
OBJECTIVES

Analyze a pedigree.

Construct a pedigree.

MATERIALS

• paper   • pencil

Procedure

1. Examine Pedigree I, which traces the dimples trait through three generations of a family. Blackened symbols represent people with dimples. Circles represent females, and squares represent males.

FIGURE 1

Pedigree I

2. Read the following passage, which describes the family shown in Pedigree I. Write the name of each person below the correct symbol in Pedigree I.

Although Jane and Joe Smith have dimples, their daughter, Clarissa, does not. Joe's father has dimples, but his mother, and his sister, Grace, do not. Jane's father, Mr. Renaldo, her brother, Jorge, and her sister, Emily, do not have dimples, but her mother does.

3. Look at Pedigree I again.

• How are marriage and offspring symbolized?

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- What do the Roman numerals symbolize?

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4. Construct a pedigree based on the following passage about curly hair.

Andy, Penny, and Delbert have curly hair, but their mother, Mrs. Cummins, does not. Mrs. Giordano, Mrs. Cummin's sister, has curly hair, but her parents, Mr. & Mrs. Lutz, do not. Deidra and Darlene Giordano have curly hair, but their sister, Katie, like her father, has straight hair.

Analysis and Conclusions

1. Summarizing Observations What type of information does a pedigree contain?

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2. Evaluating Models What advantages does a pedigree have over a written passage?

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3. Interpreting Information Take another look at Pedigree I. A genetic counselor analyzing Pedigree I suggests that a person only needs to have one dominant allele for dimples (D) in order to have dimples. If this is true, what is the genotype of person 1 in the third generation of Pedigree I?

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