

3. Study the Data Table shown for deafness in a family. On a separate sheet of paper, develop a deafness pedigree chart for the family. Be sure to use the proper symbols.

Data: Deafness Pedigree

Generation I		Generation II			Generation III
Genotype	Sex	Genotype	Sex	Spouse's Genotypes	Grandchildren's Genotypes/Sex
Dd	M	DD	M	Dd	DD/M; Dd/F
Dd	F	Dd	F	DD	Dd/F
		dd	M	Dd	dd/F; Dd/M

D = normal hearing; d = deafness

Observations

1. How many generations are represented in the chart for sickle-cell anemia? _____
2. How many carriers of the sickle-cell trait are in each generation? _____
3. How many people in the family were born with sickle-cell anemia? _____
4. From which parent did the second-generation children inherit the sickle-cell gene? _____
5. In which generation did sickle-cell anemia first show? _____

Conclusions

1. ANALYZE What can you determine about a family using a pedigree chart? _____

2. In some pedigree charts, you cannot determine the two genes, or genotype, of each individual. What symbol would not be used in this kind of pedigree chart? _____

Going Further

Using the pedigree chart that you developed for deafness, continue the chart to the next generation. Use these guidelines:

- a. All of the generation III people marry people who carry the gene for deafness.
- b. Each couple in generation III has 2 children.
- c. Four children in generation IV are deaf.