The study of percolation began in the 1950s as a model for fluid flow through a porous medium. The paths possible for flow are a random subgraph of a given lattice, say, a Cayley graph of a group. In the usual model, each edge is open, i.e., available for flow, independently with the same probability. It turns out that various geometric properties of the Cayley graph correspond with properties of percolation. For example, a graph is called amenable if it has a sequence of finite-vertex subsets \( V_n \) such that the size of the boundary of \( V_n \) divided by the size of \( V_n \) tends to 0. This is the case for Euclidean lattices. In the opposite case, such as hyperbolic lattices, the infimum of such quotients, the isoperimetric constant, is positive. We show how to calculate some interesting isoperimetric constants and describe some of the most important results in percolation theory that are related to nonamenability.