Bootstrap percolation is an iterative process on the vertices of a graph. Initially, a proper, non-empty set of vertices is infected, and all other vertices are healthy. At each iteration, every healthy vertex with a certain number of infected neighbors becomes infected, and all infected vertices remain so permanently. At the end of the process, if all vertices are infected, percolation occurs. In this case, the initial set of infected vertices percolates the graph. Necessary and sufficient conditions for a set of vertices to percolate a 3-regular graph are presented, for any integers $n \geq 3$, and the percolation process on certain 3-regular graphs is examined.