A convexity or alignment on a finite set $V$ is a collection of subsets of $V$ containing the empty set, and the whole set $V$, and is closed under intersection; this forms a natural combinatorial generalization of convexity in euclidean space. Now let $G$ be a graph of order $n$. A subset $C$ of vertices of $G$ is $g$-convex if for every pair $u, v \in C$ the vertices on every $u-v$ geodesic (i.e. shortest $u-v$ path) belong to $C$. The set of $g$-convex subsets of a graph are an interesting subfamily of alignments. In this talk we will discuss three aspects of $g$-convexity: the structure of $g$-minimal graphs (those that have the minimal number of $g$-convex sets), the complexity of counting $g$-convex sets in a graph, and when there exists $g$-convex sets of all cardinalities from 0 to $n$. (This research is joint with O. Oellermann.)