Visual patterns have a more obvious connection with geometry than musical rhythms. Nevertheless, periodic (cyclic) musical rhythms may be conveniently notated on a circle, and thus also render themselves open to geometric analyses [1]. In this paper some geometric properties of patterns, and measures of pattern complexity are analyzed, that contribute to the characterization of "good" visual and musical rhythmic patterns. Conversely, it is illustrated by means of examples, that the exploration of meaningful visual and auditory patterns uncovers interesting new problems in mathematics.