The classical Bohr inequality is generalized to the class of analytic functions mapping between two disks centered at the origin of arbitrary sizes. Bohr inequalities are next obtained for analytic functions in the hyperbolic unit disk in both the Poincaré disk and Poincaré half-plane models. The Bohr radius for both models are shown to be $\tanh(1/2)/3$. (Received August 10, 2016)