Let $V$ be a projective variety defined over a number field. A height function $h : V(\mathbb{Q}) \to \mathbb{R}$ is a tool for measuring the “arithmetic complexity” of the points of $V$. In particular, one can often use height functions to detect geometric properties of the underlying variety. In this talk, we apply this philosophy to discrete dynamical systems. Namely, given a self map $f : V \to V$ and a point $P \in V$, then we are interested in the growth rate of $h(f^n(P))$ as we repeatedly iterate the map. What can this growth rate tell us about the variety $V$, the map $f$, and the point $P$? To investigate these questions, we survey basics properties of height functions, discuss several historically significant cases (e.g., elliptic curves and projective space), and motivate additional topics in the burgeoning field of arithmetic dynamics.