An abelian differential on a Riemann surface $X$ defines a flat structure, such that $X$ can be realized as a plane polygon. Changing the shape of the polygon induces an $SL(2, \mathbb{R})$-action on the moduli space of abelian differentials, called the Teichmüller dynamics. A central question is to study the orbit closures of this action and the associated dynamical quantities, like the Lyapunov exponents and the Siegel-Veech constants. In this talk I will focus on the minimal orbit closures, called Teichmüller curves, and introduce tools in algebraic geometry to study them. As an application, we prove a conjecture of Kontsevich-Zorich regarding a special numerical property of Teichmüller curves in low genus (joint work with Martin Möller).