The notion of axiom is a fundamental notion not only in mathematics but also in science in general, and having a philosophical meaning which is up to now far to be clear. First of all we will start with a methodological question: how to approach this notion (definition, semantic cloud, quotation) and how to deal with it (normative vs. descriptive). Then we will examine specific yet different typical senses of this notion in two cases: The Zurich Axioms and the Axiom of Choice. We will go on analyzing the notion of axiom on the one hand through the trichotomy axiom / definition / theorem, on the other hand through the trichotomy axiom / truth / proof. We will furthermore discuss the rise and fall of the axiomatic method, the tentative to axiomatize not only mathematical theories, but theories of empirical sciences, like physics, biology or economy. And finally we will explain why and how a conceptual approach can be better than an axiomatic approach.