The basic notions of set theory are defined in Basic properties of sets. There we introduced a formal syntax that will be utilised to define the axioms. For easy reference:

- variables $a, b, c, ...$ to range over sets
- variables x, y, z to range over ordinary objects as well as sets.

Axiom of Extensionality

Sets which contain the same members are the same set. If sets A and B contain the same elements then A = B.

$$\forall a \forall b [\forall x (x \in a \longleftrightarrow x \in b) \rightarrow a = b]$$