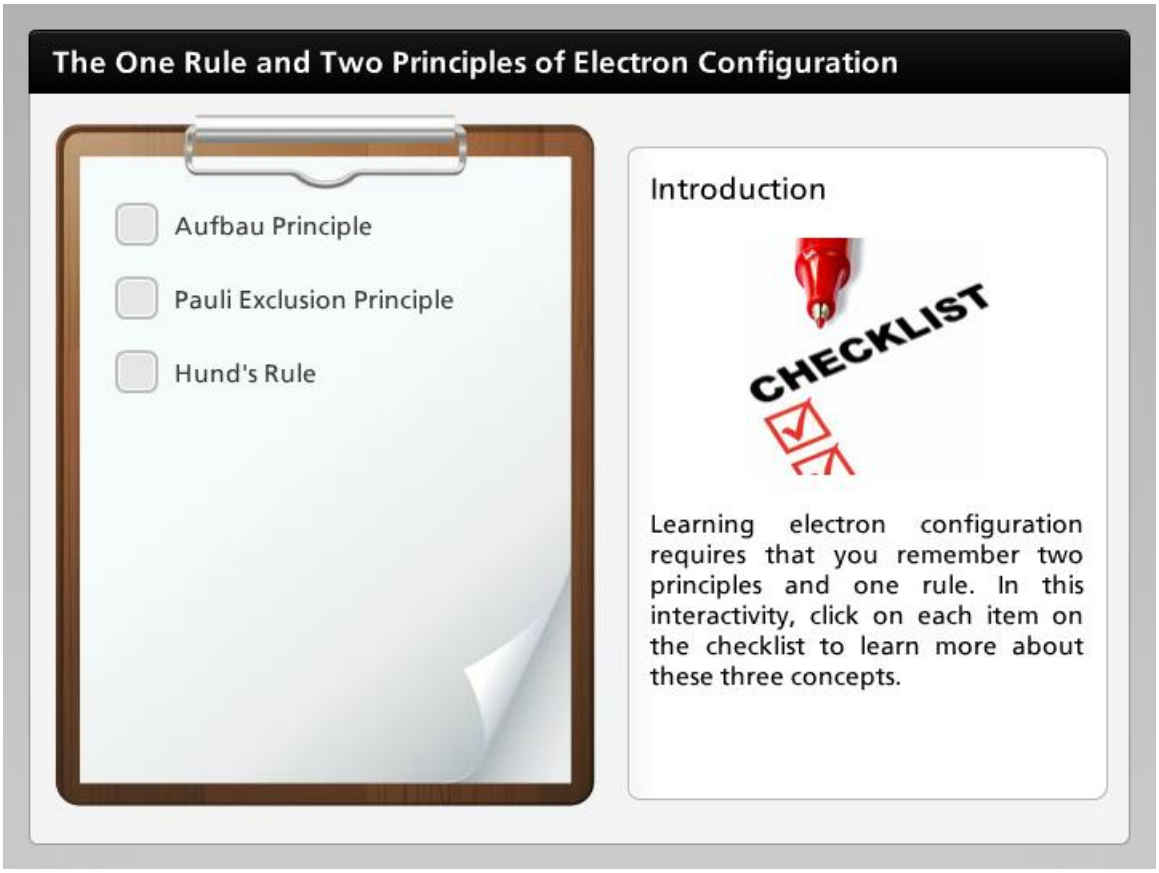
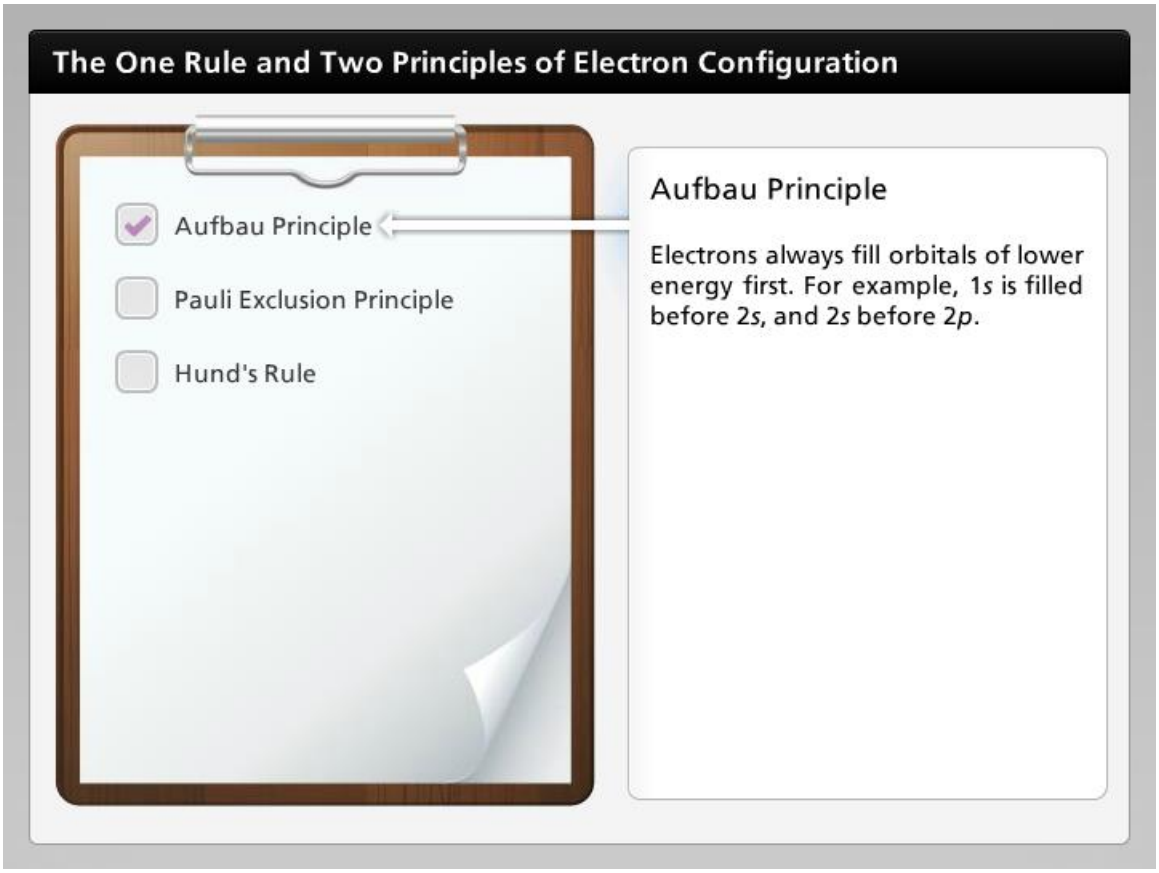
Module 3: Modern Atomic Theory, Electron Structure, and Periodicity
Topic 4 Warm-Up: The One Rule and Two Principles of Electron Configuration

Introduction



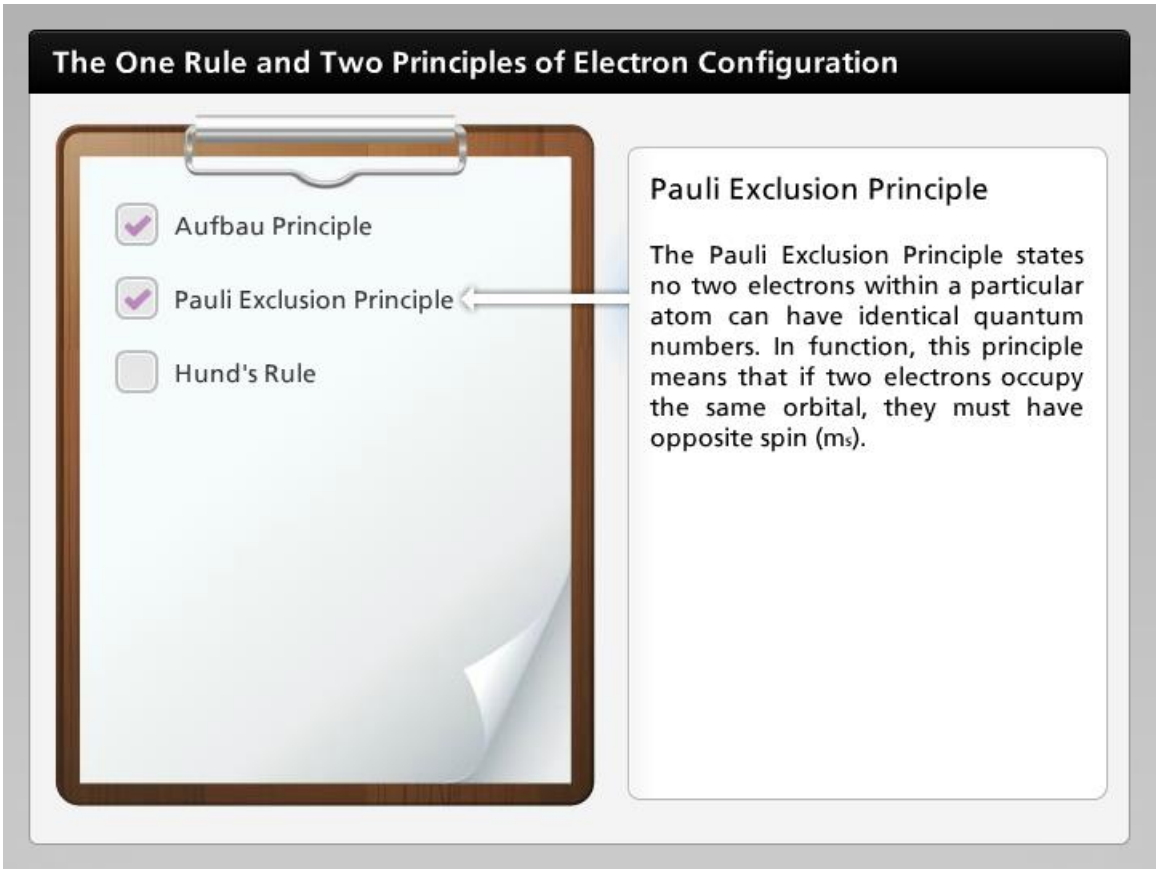
Learning electron configuration requires that you remember two principles and one rule. In this interactivity, click on each item on the checklist to learn more about these three concepts.

Aufbau Principle



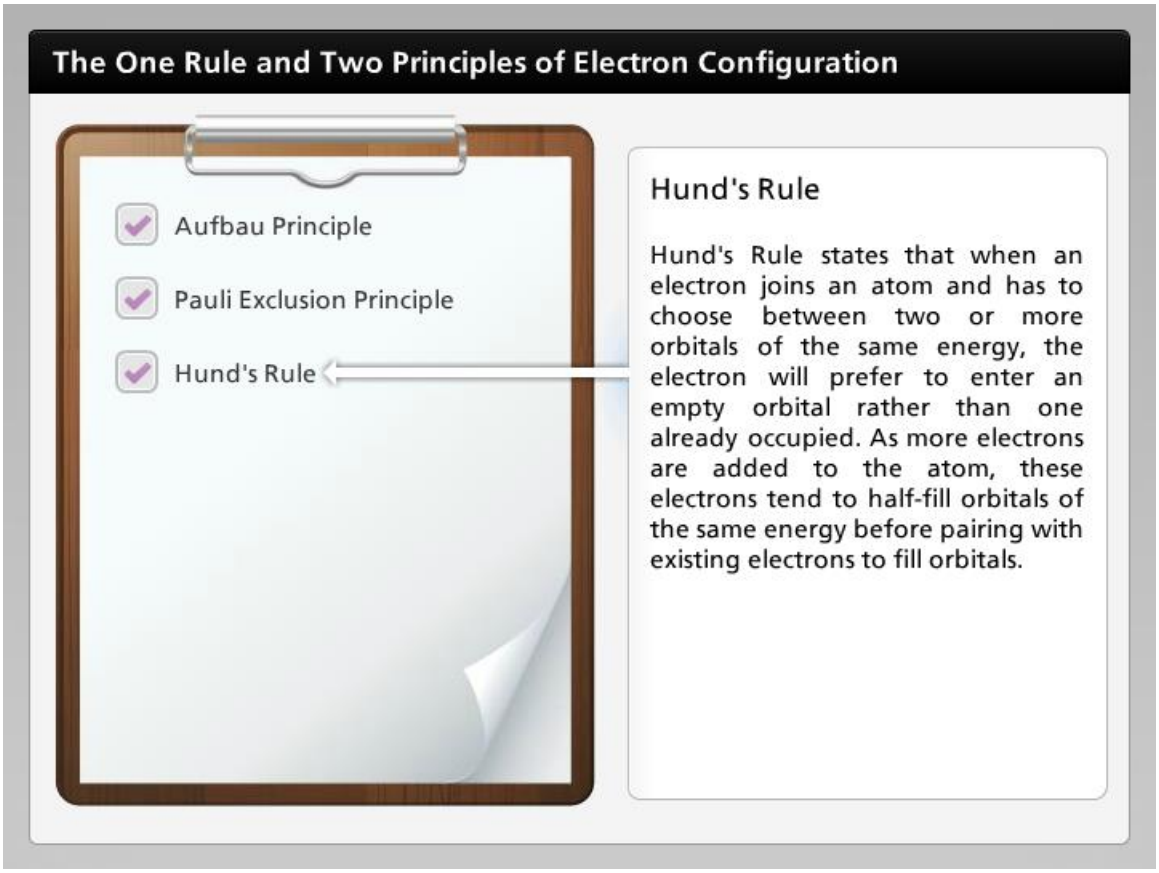
Electrons always fill orbitals of lower energy first. For example, 1*s* is filled before 2*s*, and 2*s* before 2*p*.

Pauli Exclusion Principle



The Pauli Exclusion Principle states no two electrons within a particular atom can have identical quantum numbers. In function, this principle means that if two electrons occupy the same orbital, they must have opposite spin (m_s).

Hund's Rule



Hund's Rule states that when an electron joins an atom and has to choose between two or more orbitals of the same energy, the electron will prefer to enter an empty orbital rather than one already occupied. As more electrons are added to the atom, these electrons tend to half-fill orbitals of the same energy before pairing with existing electrons to fill orbitals.