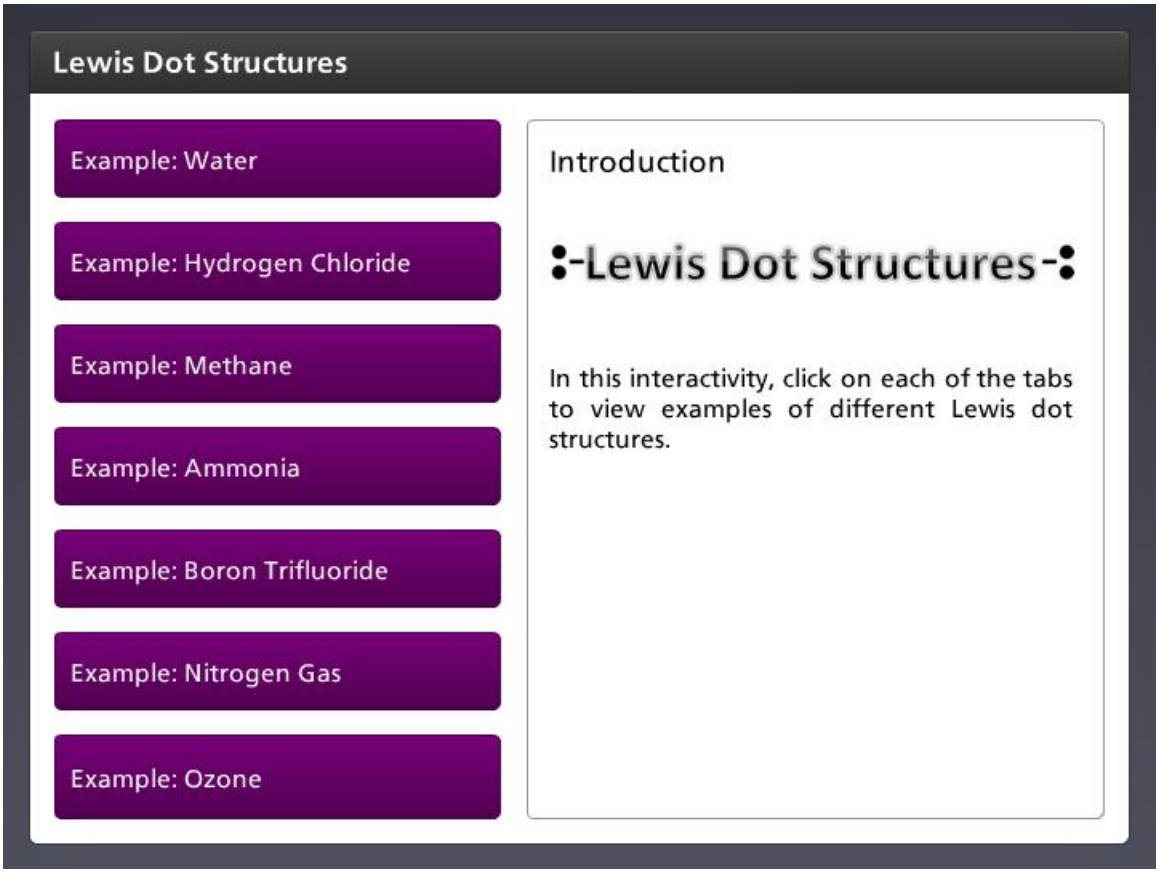
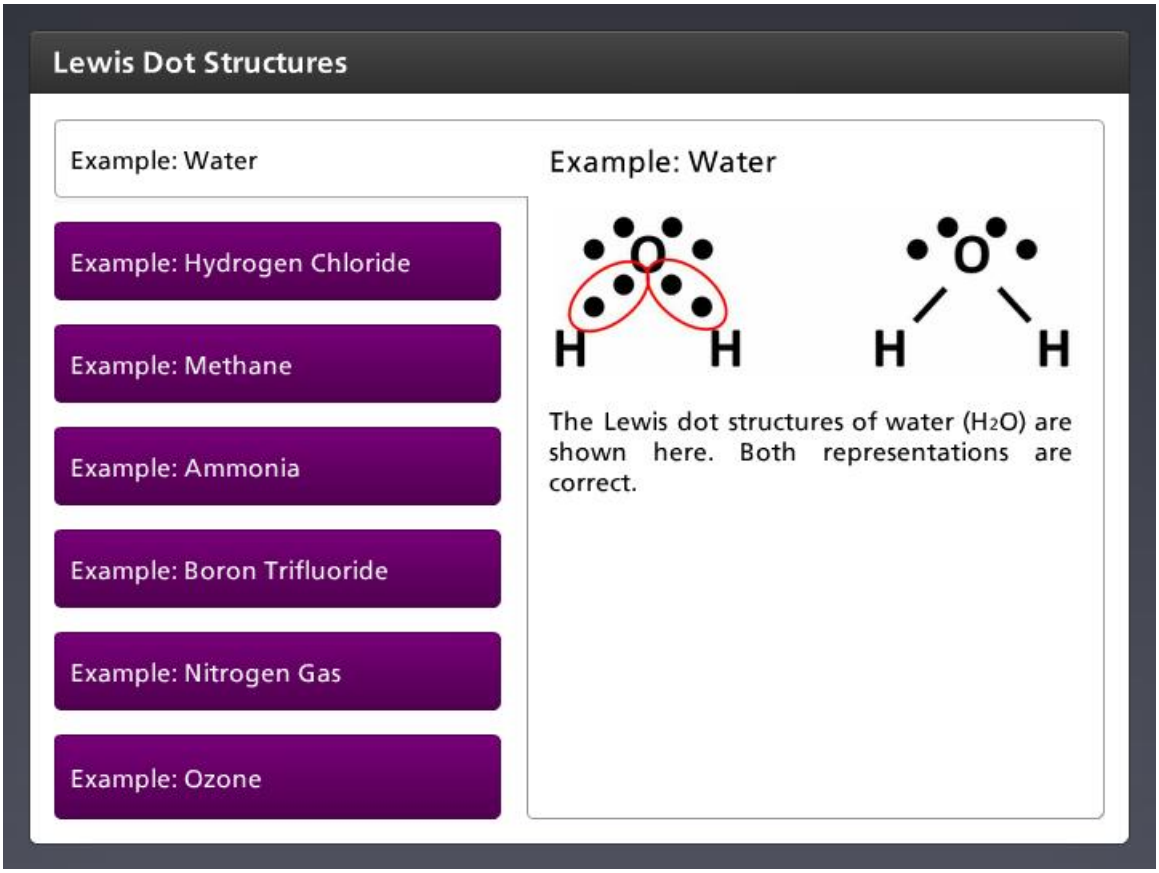
Module 4: Bonding, Formula Writing, and Nomenclature
Topic 2 Content: Lewis Dot Structures Notes

Introduction



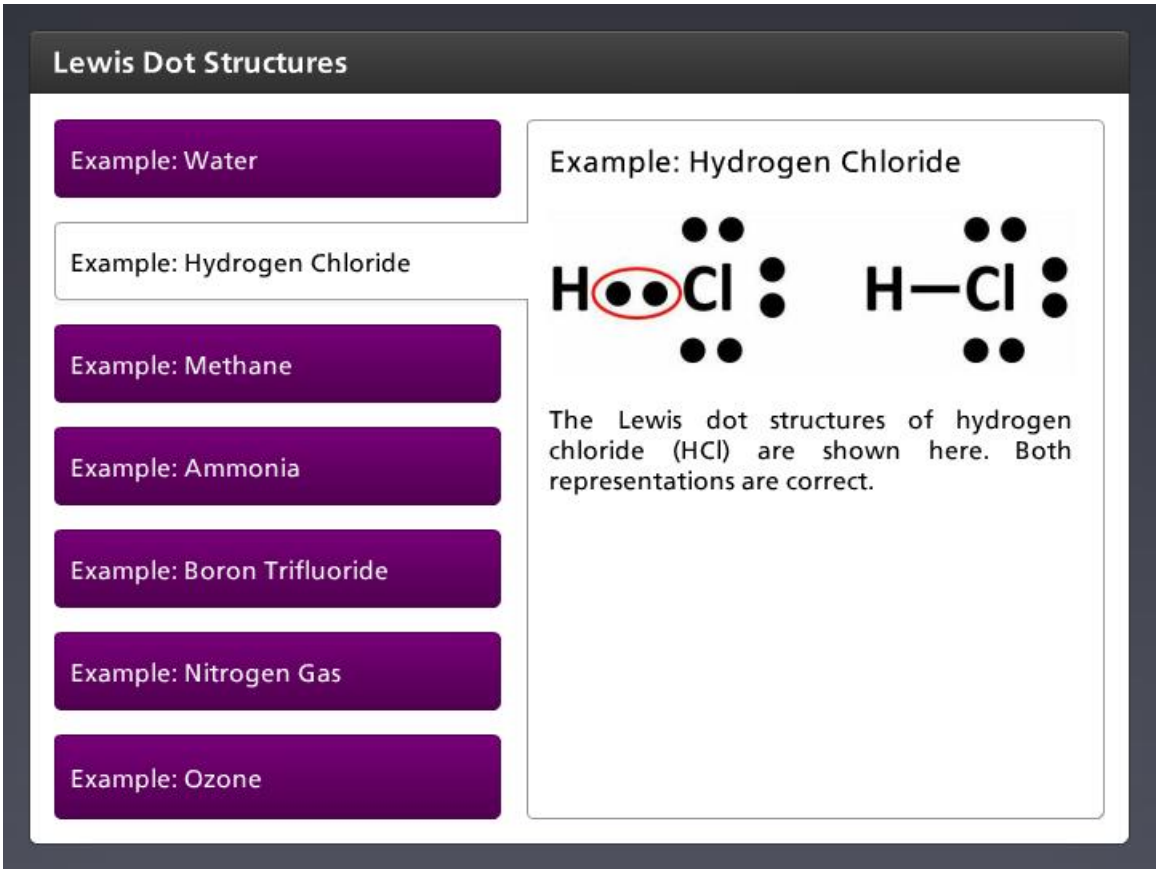
In this interactivity, click on each of the tabs to view examples of different Lewis dot structures.

Example: Water



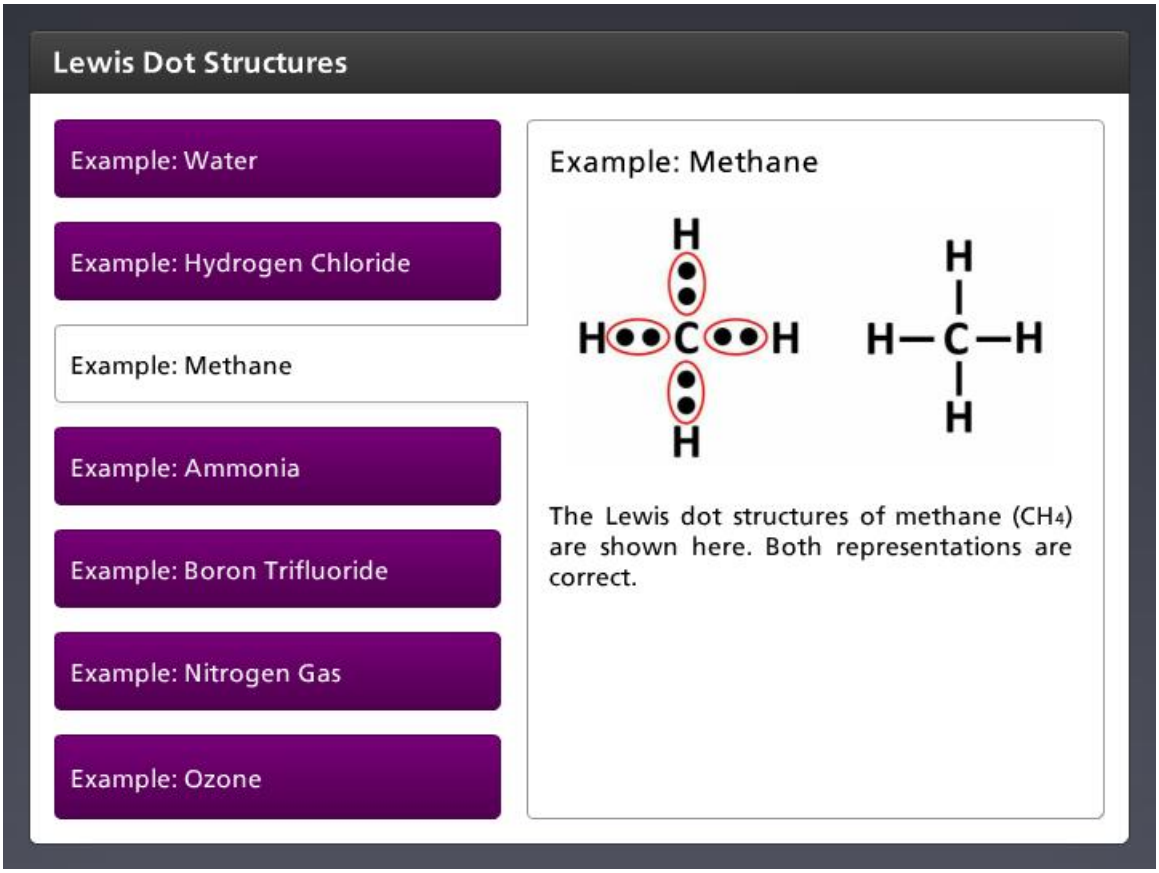
The Lewis dot structures of water (H_2O) are shown here. Both representations are correct.

Example: Hydrogen Chloride



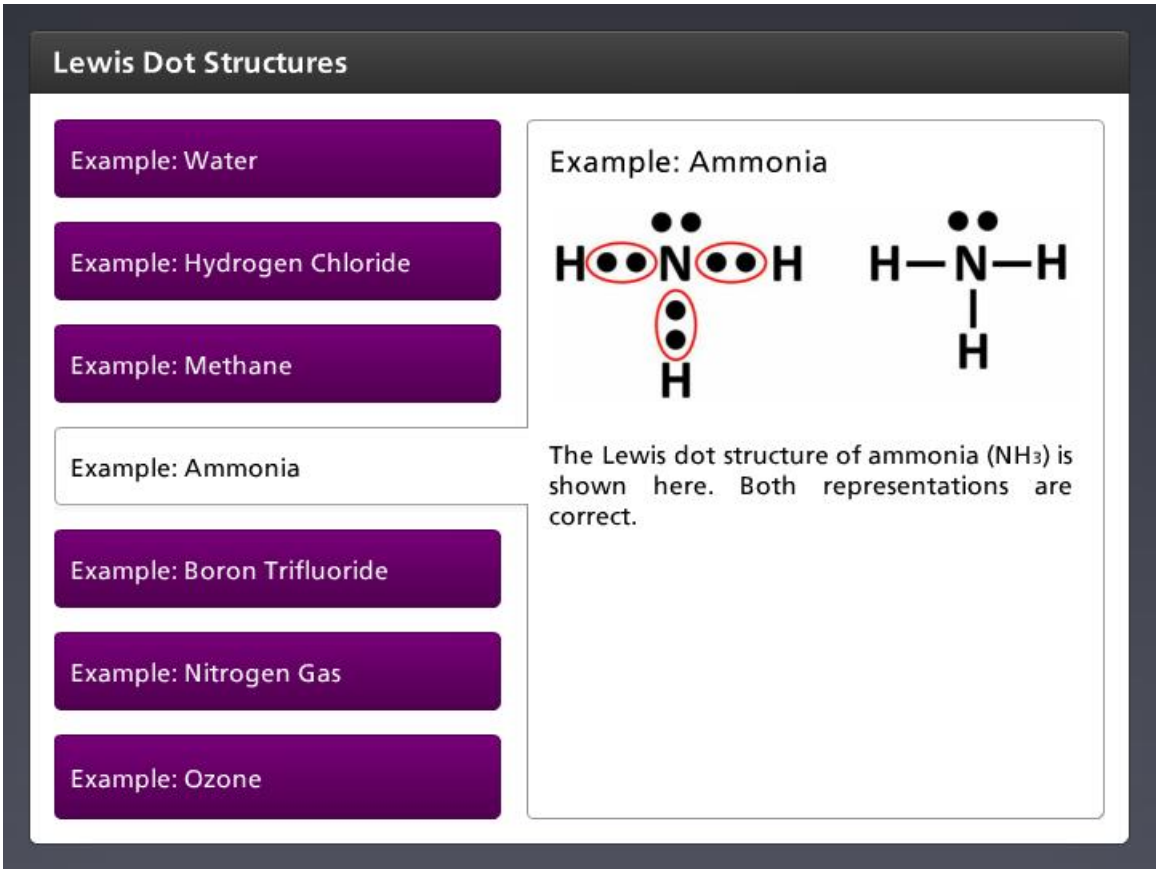
The Lewis dot structures of hydrogen chloride (HCl) are shown here. Both representations are correct.

Example: Methane



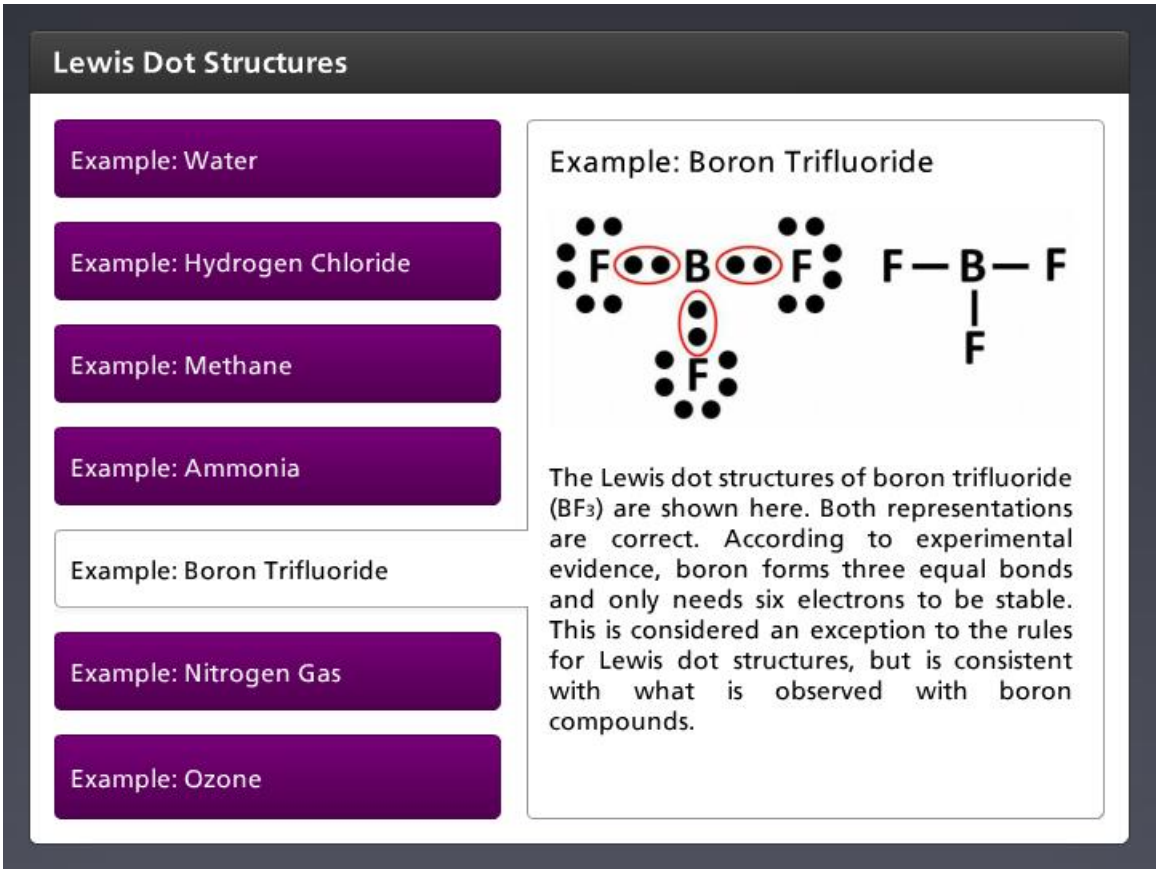
The Lewis dot structures of methane (CH_4) are shown here. Both representations are correct.

Example: Ammonia



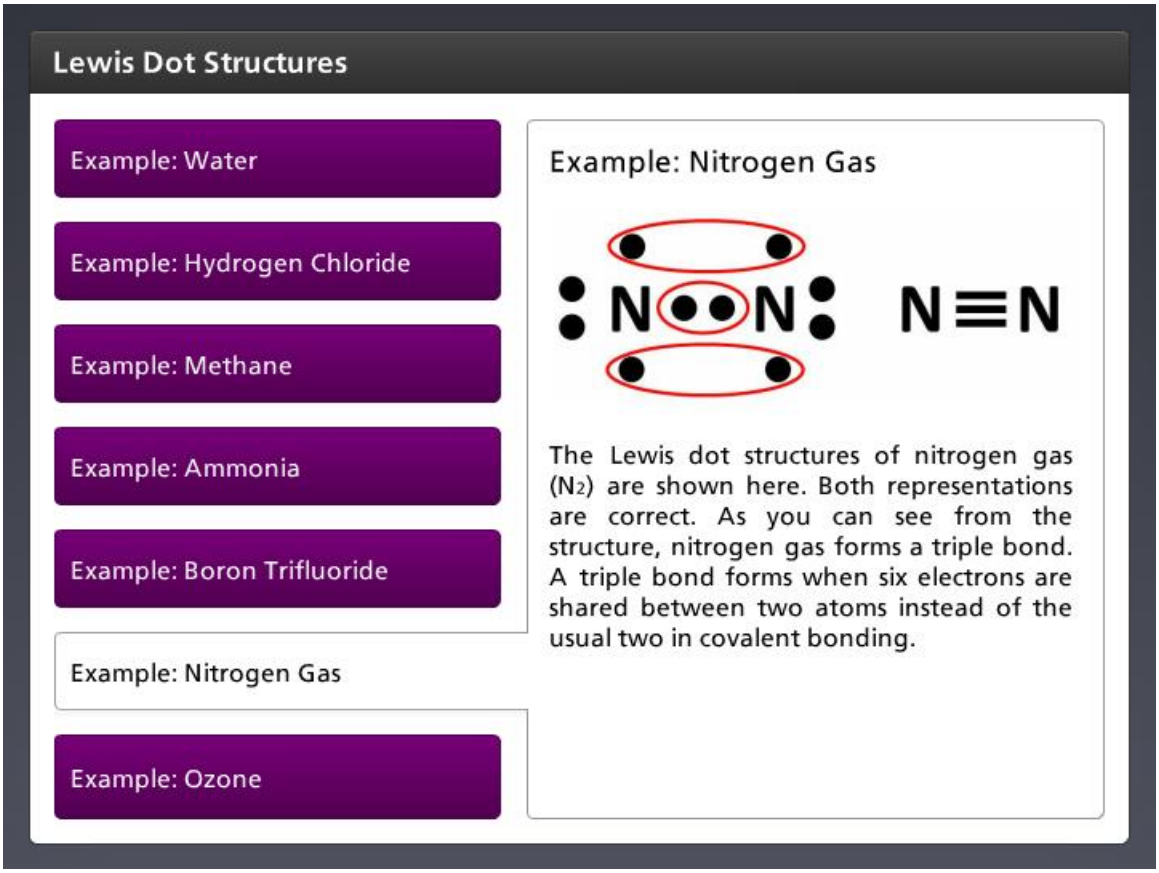
The Lewis dot structure of ammonia (NH_3) is shown here. Both representations are correct.

Example: Boron Trifluoride



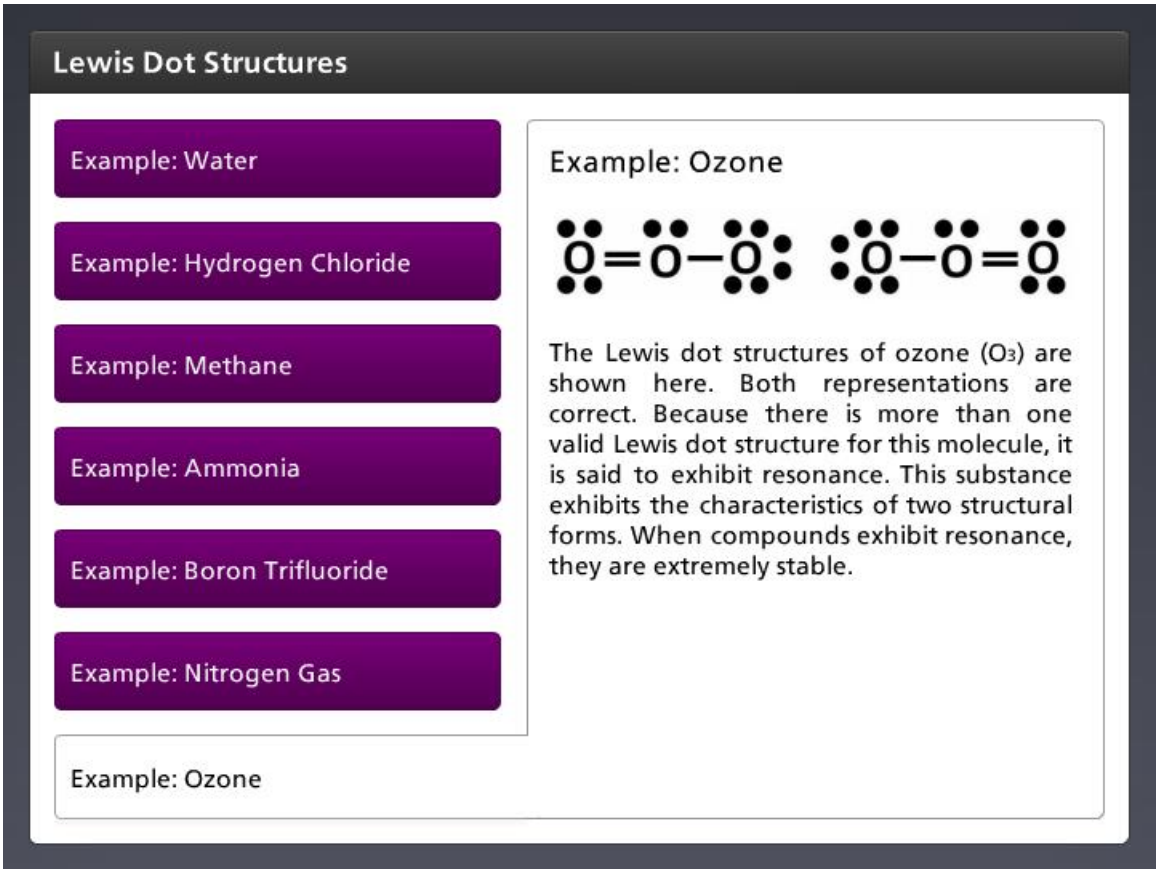
The Lewis dot structures of boron trifluoride (BF_3) are shown here. Both representations are correct. According to experimental evidence, boron forms three equal bonds and only needs six electrons to be stable. This is considered an exception to the rules for Lewis dot structures, but is consistent with what is observed with boron compounds.

Example: Nitrogen Gas



The Lewis dot structures of nitrogen gas (N_2) are shown here. Both representations are correct. As you can see from the structure, nitrogen gas forms a triple bond. A triple bond forms when six electrons are shared between two atoms instead of the usual two in covalent bonding.

Example: Ozone



The Lewis dot structures of ozone (O_3) are shown here. Both representations are correct. Because there is more than one valid Lewis dot structure for this molecule, it is said to exhibit resonance. This substance exhibits the characteristics of two structural forms. When compounds exhibit resonance, they are extremely stable.