

Modeling Ionic and Covalent bonds



Purpose: To use models to reinforce our understanding of how the structure of an atom will determine the kinds of bonds it can form.

Molecule	Will bond be covalent or ionic?	Drawing of Skittle model (represent if covalent or ionic)	Lewis dot structure (covalent or ionic...)	If ionic, what are the charges on all the ions?
H ₂				
O ₂				
NaCl				
SiO ₂				
HF				
MgCl ₂				
MgO				
AlCl ₃				

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1. In what ways was this model effective at demonstrating how atoms bond? Provide at least 3 examples.

2. How could this model be improved to more accurately show how atoms bond? Explain.

3. The number of valence electrons is important for thinking about the kinds of bonds an atom could make, but **oxidation number** refers to the number of electrons an atom wants to accept or give up. Use your periodic table to predict the oxidation numbers of the following atoms:

H	Be	B	C	N	O	F

4. Based on your understanding of covalent and ionic bonds, which kind of bond would be easier to break? Explain your reasoning.