

Bond Length-Bond Energy Connection

Short Bonds \Rightarrow **Strong Bonds** \Rightarrow **Great Bond Energies**



	H - F	H - Cl	H - Br	H - I
Bond Lengths	0.92 Å	1.27 Å	1.41 Å	1.61 Å
	<i>Increasing Bond Length</i>			
Bond Energies	565 kJ/mol	427 kJ/mol	363 kJ/mol	295 kJ/mol
	<i>Decreasing Bond Energy</i>			
	<i>Strong</i>			<i>Weak</i>



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Short Bonds \Rightarrow **Strong Bonds** \Rightarrow **Great Bond Energies**

Multiple bonds are stronger/shorter than single bonds

	C \equiv C	C = C	C - C
Bond Lengths	1.21 Å	1.34 Å	1.54 Å
	<i>Increasing Bond Length</i> 		
Bond Energies	839 kJ/mol	614 kJ/mol	347 kJ/mol
	<i>Decreasing Bond Energy</i> 		
	<i>Strong</i>		<i>Weak</i> 