
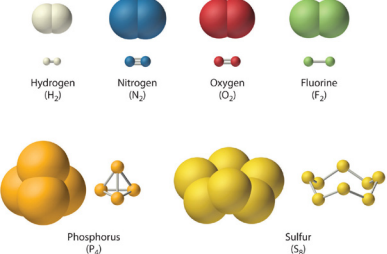
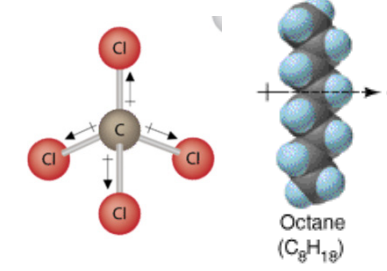
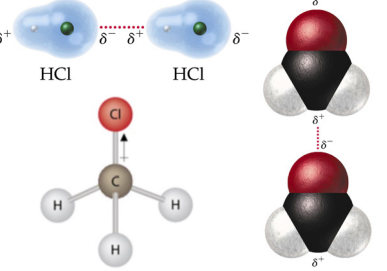
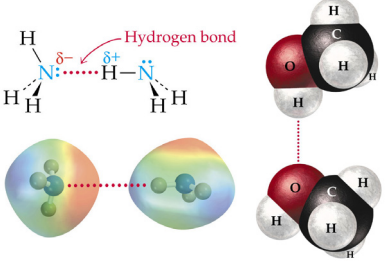

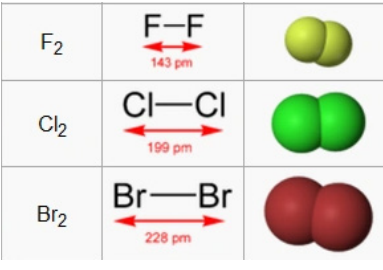
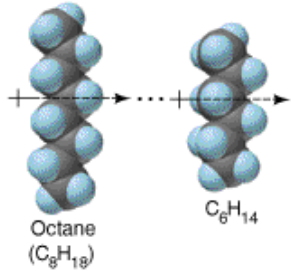
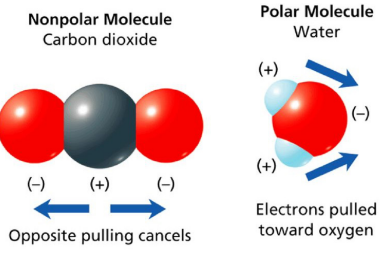
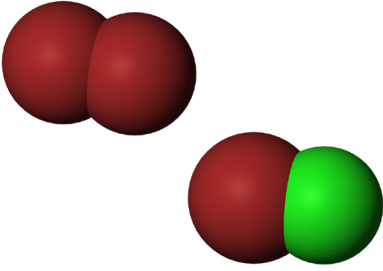


① Identify the *type* of Intermolecular Force (Van Der Waals Force)

	Electronegativity Values	Covalent Bonding	Molecular Shape	Dipole	Intermolecular Force
	the <i>same</i>	<i>non-polar</i> covalent bond	irrelevant	<i>temporary</i> <i>dipole</i> only	<i>London Dispersion</i> only
	<i>different</i>	<i>polar</i> covalent bond	<i>symmetrical</i> <i>non-polar</i> molecule	<i>temporary</i> <i>dipole</i> only	<i>London Dispersion</i> only
	<i>different</i>	<i>polar</i> covalent bond	<i>asymmetrical</i> <i>polar</i> molecule	<i>permanent</i> <i>dipole</i> (& temporary)	<i>Dipole-Dipole</i> & LDF
	<i>very different</i> H—F, O, N	<i>polar</i> covalent bond	<i>asymmetrical</i> <i>polar</i> molecule	<i>permanent</i> <i>dipole</i> (& temporary)	<i>Hydrogen Bonding</i> & <i>Dipole-Dipole</i> & LDF

② Compare the **strength** of Intermolecular Forces (Van Der Waals Force)

	<i>Can think/write about ...</i>	<i>... but must write about ...</i>	<i>... to explain, for example, ..</i>	<i>... in terms of ...</i>
	'the size of the atoms' 'the number of electron shells' 'electron distance from the nucleus'	'the electron cloud is more polarisable' 'stronger temporary dipoles are formed'	that the boiling points increase as you go down a group that CCl ₄ has a higher BPT than CH ₄	the LDF's in ... are stronger than in ...
	'the size of the molecules' 'the mass of the molecules' 'the number of atoms'	'the electron cloud is more extensive' 'a larger number of temporary dipoles are formed'	that the boiling points increase as the chain gets longer	the LDF's in ... are stronger than in ...
	'the electronegativity values' 'the type of covalent bonds' 'the shape of the molecule'	'the bonding is polar but no permanent dipole' 'the bonding is polar and there is a permanent dipole'	that the boiling points depend on the <i>type</i> of intermolecular forces present	hydrogen bonding > dipole-dipole > LDF's (<i>in similar molecules</i>)
	'the electronegativity values' 'the shape of the molecule'	'bonding is non-polar / no permanent dipole' 'the bonding is polar / permanent dipole'	that the boiling point of Br ₂ (LDF) is higher than that of BrCl (dipole-dipole) (<i>data, not prediction</i>)	LDF's can be stronger than dipole-dipole and even hydrogen bonding