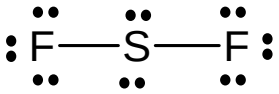
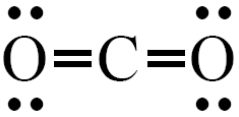
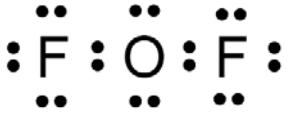
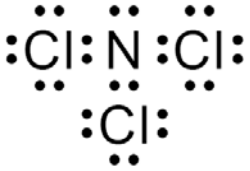
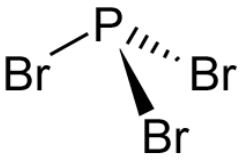
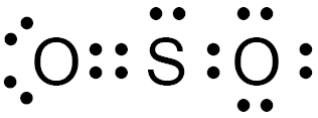
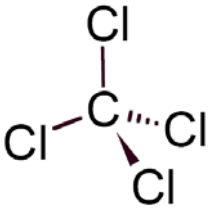
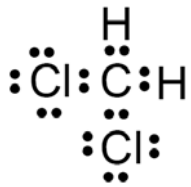
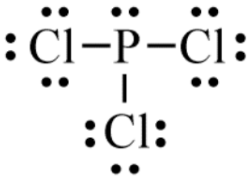
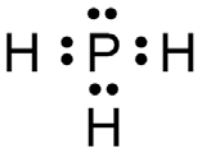
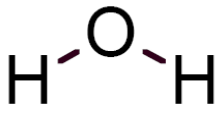
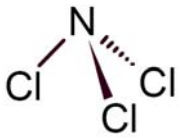
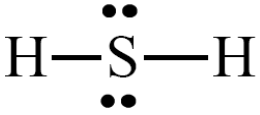
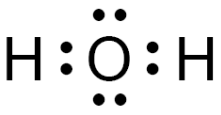
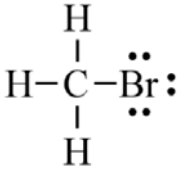
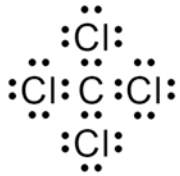
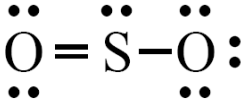
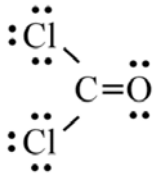
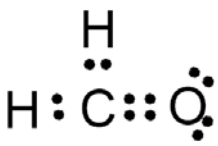
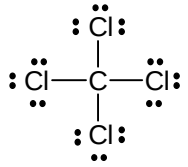
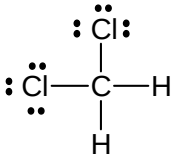
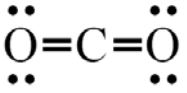
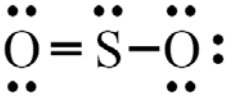
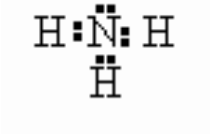
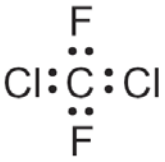
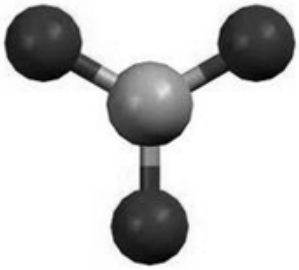
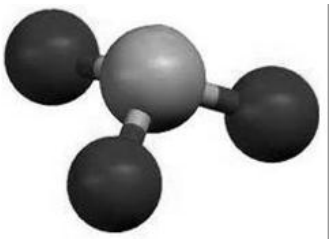
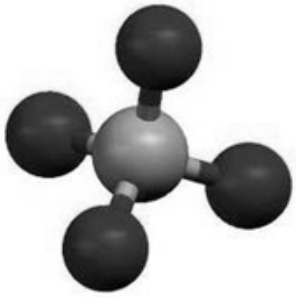
shape SF_2 	shape HCl 	shape CO_2 	shape F_2O 
bent or V-shaped	linear	linear or straight	bent or V-shaped
shape NCl_3 	shape 	shape SO_2 	shape 
trigonal or triangular pyramid	trigonal or triangular pyramid	bent or V-shaped	tetrahedral
shape CH_2Cl_2 	shape PCl_3 	shape PH_3 	shape 
tetrahedral	trigonal or triangular pyramid	trigonal or triangular pyramid	bent or V-shaped
shape NCl_3 	shape H_2S 	shape H_2O 	shape CH_3Br 
trigonal or triangular pyramid	bent or V-shaped	bent or V-shaped	tetrahedral

shape CCl_4 	shape SO_2 	Na_2O or $NaCl$ Type of particles Type of bond	SO_3 Type of particles Type of bond
tetrahedral	bent or V-shaped	ions ionic bond	Molecules Van der Waals
shape $COCl_2$ 	shape H_2CO / $HCHO$ 	SiO_2 Type of particles Type of bond	$MgCl_2$ or MgO Type of particles Type of bond
trigonal planar	trigonal planar	atoms covalent	ions ionic bond
S_8 Type of particles Type of bond	SCl_2 Type of particles Type of bond	C (diamond) Type of particles Type of bond	$SiCl_4$ Type of particles Type of bond
molecules Van der Waals	molecules Van der Waals	atoms covalent	molecules Van der Waals
Cu Type of particles Type of bond	C (graphite) Type of particles Type of bond	intermolecular attractions / forces / bonds are…	intramolecular attractions / forces / bonds are…
atoms metallic	atoms covalent	between molecules	within molecules

polar or non-polar molecule? 	**polar or non-polar molecule?** 	**polar or non-polar molecule?** 	**polar or non-polar molecule?** 
non-polar	**polar**	**non-polar**	**polar**
polar or non-polar molecule? 	**polar or non-polar molecule?** 	**shape** O_2 	**shape** O_3 
polar	**polar**	**linear**	**bent or V-shaped**
van der Waals forces or attractions are…	**uneven sharing of electrons, one atom in bonding pair being more electronegative than the other**	**ability to attract electrons towards itself in a covalent bond**	**F O N/Cl S**
weak intermolecular forces	**polar covalent bond**	**electronegativity**	**The 5 most EN elements**
shape of molecule is determined by no. of regions of negative charge around central atom, which repel each other as far as possible & the no. of bonding and non-bonding regions.	**covalent bond with negative end and positive end OR unequal sharing of electrons**	**pairs of bonding or non bonding electrons, or double or triple bonds…**	**ability to conduct electricity by moment of either electrons *or* ions**
shape of molecule	**polar bond**	**regions of negative charge**	**electrical conductivity**

type of solid small covalently bonded molecules with weak attractions between molecules	temperature @ which (s) → (l); it's value reflects strength of bonds between particles	non polar solutes dissolve in _____ solvents e.g._____	polar solutes eg sugar dissolve in _____ solvents e.g._____
molecular	melting point	Nonpolar (e.g. cyclohexane)	polar (e.g. water)
type of solid large covalently bonded molecules with strong covalent bonds between atoms	**type of solid** 3D Crystal lattice of + and - ions	cations and anions – charged particles or…	ionic solutes eg NaCl dissolve in _____ solvents
covalent network	ionic	ions	polar (e.g. water)
weak attractive forces between dipoles	**type of solid** metal atoms with loosely held valence electrons that can then drift randomly through the lattice	atoms bonded together, carrying no electrical charge	electrostatic attraction between oppositely charged ions
weak intermolecular forces	metallic	molecules	ionic bond
attraction between metal atoms and their loosely held valence electrons	bond formed by the sharing of a pair of electrons	trend in bonding moving across the Periodic Table L →R e.g. NaCl $AlCl_3$ PCl_3 Cl_2	**type of solid** layers of metal atoms in which loosely held valence electrons are attracted to the nuclei of neighbouring atoms
metallic bonds	covalent bond	ionic ⇒ covalent	metallic

diagram showing bonding between atoms in molecule, and any lone pairs of electrons in the molecule	2 or more atoms held together by covalent bonds	bond between two atoms containing more than one pair of electrons – can be double or triple	small covalent molecules eg H_2O, $C_6H_{12}O_6$ and CO_2
Lewis structure	**molecule**	**multiple bond**	**molecular covalent**
crystal lattice of ions held together by electrostatic attractions	metal atoms held together by metallic bonding	many atoms in a regular 3D lattice held together by covalent bonds e.g. diamond & SiO_2	charged particle (formed when atom or group of atoms lose or gain electrons)
ionic solid	**metallic solid**	**covalent network (giant)**	**ion**
smallest part of an element that can take part in a chemical reaction	bond between ions due to attraction between oppositely charged particles	bond formed between metals in a metallic lattice	bond between two atoms formed by the sharing of a pair of electrons
atom	**ionic bond**	**metallic bond**	**covalent bond**
van der Waals force – weak attractive force between molecules	A group 17 element e.g. F_2, Cl_2, Br_2, I_2	compound formed when a halogen reacts with another element, e.g. chlorides, bromides	shape of a molecule, atoms in a straight line eg CO_2
weak intermolecular forces	**halogen**	**halides**	**linear**

shape of a molecule, meaning bent or v-shaped e.g. H_2O			
angular	**trigonal planar**	**trigonal pyramidal**	**tetrahedral**
valence shell electron pair repulsion theory – theory used to predict shape of molecules	a separation of electric charge leading to a molecule having dipole	tendency of an atom to draw the electrons in a bond toward itself	the movement of charged particles: electrons or ions that are free to move
VSEPR theory	**polarity**	**electronegativity**	**electrical conductivity**
molecule with polar bonds or where polarity of several bonds does not cancel	molecule with no polar bonds or where polar bonds cancel their effects	molecule containing hydrogen and carbon atoms only	molecule with an unequal distribution of charge overall
polar molecule	**non-polar molecule**	**hydrocarbon**	**polar molecule**
Substance that will dissolve in a solvent	substance, usually liquid, that will dissolve another substance (the solute)	the positive and negative ends of a polar bond or molecule	atoms in 3D lattice with valence electrons attracted to nuclei of neighbouring atoms
solute	**solvent**	**dipole**	**metallic bonding**