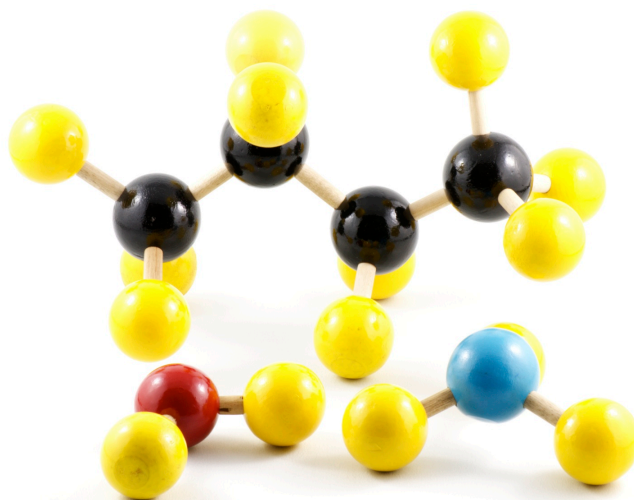
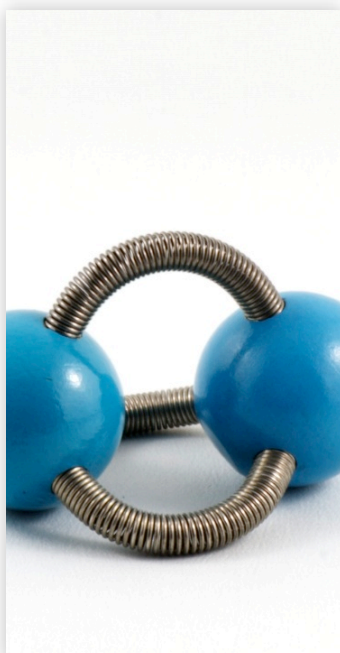




Molecular Models

Grade 10 Science

Look at the model kit your teacher gave you. Each ball represents a particular element. Each stick or spring represents a **shared pair** of electrons.

Colour	Element	Number of Holes	Group Number	Combining Capacity
blue	nitrogen	3	15	3
black	carbon			
yellow	hydrogen			
green	chlorine			
red	oxygen			

What pattern do you notice?



For each molecule in the table below

- draw a **Lewis Structure Diagram** (electron-dot diagram)
- draw a **structural diagram**
- construct a **model** of the molecule

After you have finished the Lewis structure diagram, the structural diagram, and the model for a molecule, show them to your teacher.

C2.2

construct molecular models to illustrate the structure of molecules in simple chemical reactions, and produce diagrams of these models

Molecule	Lewis Structure	Structural Diagram	Teacher's Initials
H ₂			
O ₂			
Cl ₂			
H ₂ O			

Molecule	Lewis Structure	Structural Diagram	Teacher's Initials
CCl ₄			
NH ₃			
CH ₄			
C ₂ H ₆			
C ₂ H ₄			
C ₂ H ₂			

Periodic Table and other useful information

1 1 H 1.01	2											13	14	15	16	17	18 2 He 4.00
3 Li 6.94	4 Be 9.01											5 B 10.8	6 C 12.01	7 N 14.01	8 O 16.00	9 F 19.00	10 Ne 20.2
11 Na 22.99	12 Mg 24.31	3	4	5	6	7	8	9	10	11	12	13 Al 26.98	14 Si 28.09	15 P 30.97	16 S 32.07	17 Cl 35.45	18 Ar 39.9
19 K 39.10	20 Ca 40.08	21 Sc 45.0	22 Ti 47.9	23 V 50.9	24 Cr 52.0	25 Mn 54.9	26 Fe 55.8	27 Co 58.9	28 Ni 58.69	29 Cu 63.55	30 Zn 65.41	31 Ga 69.7	32 Ge 72.6	33 As 74.9	34 Se 79.0	35 Br 79.90	36 Kr 83.8
37 Rb 85.5	38 Sr 87.6	39 Y 88.9	40 Zr 91.2	41 Nb 92.9	42 Mo 95.9	43 Tc (99)	44 Ru 101.1	45 Rh 102.9	46 Pd 106.4	47 Ag 107.9	48 Cd 112.4	49 In 114.8	50 Sn 118.7	51 Sb 121.8	52 Te 127.6	53 I 126.9	54 Xe 131.3
55 Cs 132.9	56 Ba 137.3	57-71 see below	72 Hf 178.5	73 Ta 180.9	74 W 183.9	75 Re 186.2	76 Os 190.2	77 Ir 192.2	78 Pt 195.1	79 Au 197.0	80 Hg 200.6	81 Tl 204.4	82 Pb 207.2	83 Bi 209.0	84 Po (209)	85 At (210)	86 Rn (222)
87 Fr (223)	88 Ra (226)	89-103 see below															
			57 La 138.9	58 Ce 140.1	59 Pr 140.9	60 Nd 144.2	61 Pm (147)	62 Sm 150.4	63 Eu 152.0	64 Gd 157.3	65 Tb 158.9	66 Dy 162.5	67 Ho 164.9	68 Er 167.3	69 Tm 168.9	70 Yb 173.0	71 Lu 175.0
			89 Ac (227)	90 Th 232.0	91 Pa (231)	92 U 238.0	93 Np (237)	94 Pu (242)	95 Am (243)	96 Cm (247)	97 Bk (247)	98 Cf (251)	99 Es (252)	100 Fm (257)	101 Md (258)	102 No (259)	103 Lr (260)

Hydrocarbons	
Name	Formula
methane	CH ₄
ethane	C ₂ H ₆
propane	C ₃ H ₈
butane	C ₄ H ₁₀
pentane	C ₅ H ₁₂
hexane	C ₆ H ₁₄
heptane	C ₇ H ₁₆
octane	C ₈ H ₁₈
nonane	C ₉ H ₂₀
decane	C ₁₀ H ₂₂
undecane	C ₁₁ H ₂₄
dodecane	C ₁₂ H ₂₆
tetradecane	C ₁₄ H ₃₀

