Symbols, atomic numbers & protons

Name: _____ Class: _____ Date: _____

About 30 minutes · 32 questions. Use the periodic table on the last page. Lesson 2 has no hints.

1. Symbols and names

01. **Ne** _____

02. **K** _____

03. **Si** _____

04. **Ag** _____

05. **Au** _____

06. **Zn** _____

07. **Br** _____

08. **P** _____

2. Atomic numbers and protons

Q.	Symbol	Atomic number	Protons in one atom
9	**Be**		
10	**B**		
11	**F**		
12	**Ne**		
13	**Si**		
14	**P**		
15	**K**		
16	**Zn**		

Find your way around the table

Use the periodic table. Write symbols carefully: a capital letter first, followed by a lowercase letter if there is a second letter.

17. Which element has atomic number 18? Write its symbol.

18. An atom has 30 protons. What is its element symbol?

19. Which element is directly to the right of Si in the same period? Write its symbol.

20. Which element is directly below F in the same group? Write its symbol.

21. Which element is in period 4, group 2? Write its symbol.

22. How many more protons does one Si atom have than one Al atom?

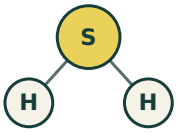
23. Which element has atomic number 47? Write its symbol.

24. What is the difference in proton count between one Br atom and one Cl atom?

From atoms to molecules

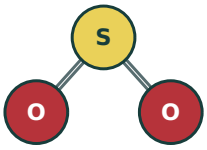
Each labelled circle is one atom. These are simplified models, not to scale. Count the atoms; fill in the formula subscripts. Enter 1 in these boxes too, although 1 is normally omitted in a chemical formula.

25. Hydrogen sulfide



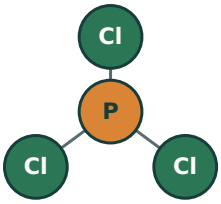
H ☐ **S** ☐

26. Sulfur dioxide



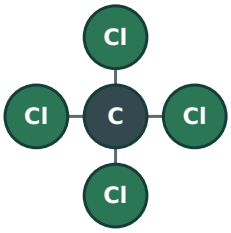
S ☐ **O** ☐

27. Phosphorus trichloride



P ☐ **Cl** ☐

28. Carbon tetrachloride



C ☐ **Cl** ☐

29. Two hydrogen sulfide molecules



H	S	Total

Balance the equations

Enter the smallest possible positive whole numbers, including the coefficient 1. Do not change the subscripts in the formulas. Examine the molecular models above each equation.

30.



$\square\ H_2 + \square\ Br_2 \rightarrow \square\ HBr$

Atom counts on the left: _____ on the right: _____

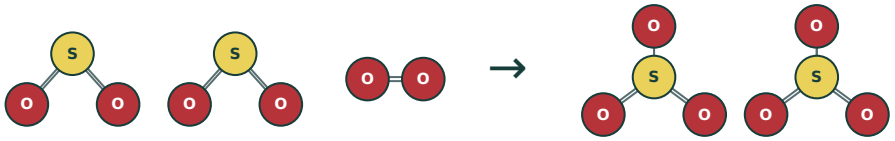
31.



$\square\ CO + \square\ O_2 \rightarrow \square\ CO_2$

Atom counts on the left: _____ on the right: _____

32.



$\square\ SO_2 + \square\ O_2 \rightarrow \square\ SO_3$

Atom counts on the left: _____ on the right: _____

The periodic table · 118 elements

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	1 H Hydrogen																	2 He Helium
2	3 Li Lithium	4 Be Beryllium											5 B Boron	6 C Carbon	7 N Nitrogen	8 O Oxygen	9 F Fluorine	10 Ne Neon
3	11 Na Sodium	12 Mg Magnesium											13 Al Aluminium	14 Si Silicon	15 P Phosphorus	16 S Sulfur	17 Cl Chlorine	18 Ar Argon
4	19 K Potassium	20 Ca Calcium	21 Sc Scandium	22 Ti Titanium	23 V Vanadium	24 Cr Chromium	25 Mn Manganese	26 Fe Iron	27 Co Cobalt	28 Ni Nickel	29 Cu Copper	30 Zn Zinc	31 Ga Gallium	32 Ge Germanium	33 As Arsenic	34 Se Selenium	35 Br Bromine	36 Kr Krypton
5	37 Rb Rubidium	38 Sr Strontium	39 Y Yttrium	40 Zr Zirconium	41 Nb Niobium	42 Mo Molybdenum	43 Tc Technetium	44 Ru Ruthenium	45 Rh Rhodium	46 Pd Palladium	47 Ag Silver	48 Cd Cadmium	49 In Indium	50 Sn Tin	51 Sb Antimony	52 Te Tellurium	53 I Iodine	54 Xe Xenon
6	55 Cs Caesium	56 Ba Barium	57–71 ↓	72 Hf Hafnium	73 Ta Tantalum	74 W Tungsten	75 Re Rhenium	76 Os Osmium	77 Ir Iridium	78 Pt Platinum	79 Au Gold	80 Hg Mercury	81 Tl Thallium	82 Pb Lead	83 Bi Bismuth	84 Po Polonium	85 At Astatine	86 Rn Radon
7	87 Fr Francium	88 Ra Radium	89–103 ↓	104 Rf Rutherfordium	105 Db Dubnium	106 Sg Seaborgium	107 Bh Bohrium	108 Hs Hassium	109 Mt Meitnerium	110 Ds Darmstadtium	111 Rg Roentgenium	112 Cn Copernicium	113 Nh Nihonium	114 Fl Flerovium	115 Mc Moscovium	116 Lv Livermorium	117 Ts Tennessine	118 Og Oganesson
57–71				57 La Lanthanum	58 Ce Cerium	59 Pr Praseodymium	60 Nd Neodymium	61 Pm Promethium	62 Sm Samarium	63 Eu Europium	64 Gd Gadolinium	65 Tb Terbium	66 Dy Dysprosium	67 Ho Holmium	68 Er Erbium	69 Tm Thulium	70 Yb Ytterbium	71 Lu Lutetium
89–103				89 Ac Actinium	90 Th Thorium	91 Pa Protactinium	92 U Uranium	93 Np Neptunium	94 Pu Plutonium	95 Am Americium	96 Cm Curium	97 Bk Berkelium	98 Cf Californium	99 Es Einsteinium	100 Fm Fermium	101 Md Mendelevium	102 No Nobelium	103 Lr Lawrencium

Top number = atomic number = protons in one atom. Columns: groups 1–18. Rows: periods 1–7. The two lower rows belong to periods 6 and 7.

Viðmið / References: IUPAC · iupac.org/what-we-do/periodic-table-of-elements/ | PubChem · pubchem.ncbi.nlm.nih.gov/periodic-table/ | Íslensk heiti: Þorsteinn Sæmundsson · halo.internet.is/frumefni.html