

Optional Honors Chemistry Assignment



In preparation for honors chemistry, I recommend (optional) that you complete and memorize the following sets of flashcards within the first week of this course. The flashcards will **not** be a grade, as they are only a study aid to help you with rote memorization, but they can earn you valuable coins. This assignment is designed to facilitate your transition into chemistry and is representative of the most basic prerequisite knowledge that you will need entering the class. Again, you can earn coins for completing this optional assignment.

Flashcards Instructions: You will see a list of what needs to be on the flashcards. For elements and polyatomic ions, put the symbol on one side and the name on the other. You will be provided with all this information during assessments, but this optional assignment and quiz will earn you valuable coins that you can redeem for extra credit and other academic privileges.

Element Names and Symbols Flashcards

Directions: Write the element symbol on one side and the name on the other.

Example Flashcard:

Gallium	Ga
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Elements and Symbols List

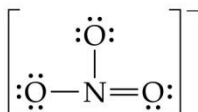
Hydrogen	H	Cobalt	Co	Gold	Au
Helium	He	Nickel	Ni	Mercury	Hg
Lithium	Li	Copper	Cu	Thallium	Tl
Beryllium	Be	Zinc	Zn	Lead	Pb
Boron	B	Gallium	Ga	Bismuth	Bi
Carbon	C	Germanium	Ge	Radon	Rn
Nitrogen	N	Arsenic	As	Radium	Ra
Oxygen	O	Selenium	Se	Uranium	U
Fluorine	F	Bromine	Br		
Neon	Ne	Krypton	Kr		
Sodium	Na	Rubidium	Rb		
Magnesium	Mg	Strontium	Sr		
Aluminum	Al	Yttrium	Y		
Silicon	Si	Zirconium	Zr		
Phosphorous	P	Palladium	Pd		
Sulfur	S	Silver	Ag		
Chlorine	Cl	Cadmium	Cd		
Argon	Ar	Tin	Sn		
Potassium	K	Antimony	Sb		
Calcium	Ca	Tellurium	Te		
Scandium	Sc	Iodine	I		
Titanium	Ti	Xenon	Xe		
Vanadium	V	Cesium	Cs		
Chromium	Cr	Barium	Ba		
Manganese	Mn	Tungsten	W		
Iron	Fe	Platinum	Pt		

Polyatomic Ion Flashcards

Directions: Write the polyatomic ion symbol on one side and the name on the other.

Example Flashcard:

$\text{Cr}_2\text{O}_7^{2-}$	dichromate
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Polyatomic ions are groups of multiple atoms that have a charge (positive or negative). The symbols shown below tell you what elements are in the ion, how many atoms of each, and the charge. For example, NO_3^- contains a nitrogen atom, three oxygen atoms, and the entire group has a charge of -1.

Memorization Hints: Polyatomic Ions

- If you have two ions with similar names and the only difference is the number of oxygen atoms in your ion:
 - ite** means smaller number of O
 - ate** means larger number of O
- Hypo- (smallest) and Per- (largest) are used if there are four ions with similar names and different numbers of oxygen.

Positive Polyatomic Ions

1+

Ammonium (NH_4^+)

Hydronium (H_3O^+)

2-

Carbonate (CO_3^{2-})

Chromate (CrO_4^{2-})

Dichromate ($\text{Cr}_2\text{O}_7^{2-}$)

Sulfate (SO_4^{2-})

Sulfite (SO_3^{2-})

Negative Polyatomic Ions

1-

Acetate ($\text{C}_2\text{H}_3\text{O}_2^-$)

Chlorate (ClO_3^-)

Chlorite (ClO_2^-)

Cyanide (CN^-)

Hydrogen carbonate/bicarbonate (HCO_3^-)

Hydroxide (OH^-)

Hypochlorite (ClO^-)

Nitrate (NO_3^-)

Nitrite (NO_2^-)

Perchlorate (ClO_4^-)

Permanganate (MnO_4^-)

Iodate (IO_3^-)

3-

Phosphate (PO_4^{3-})

Phosphite (PO_3^{3-})

Additional Polyatomic Ions: The following polyatomic ions may appear on exams; however, you do not need to memorize them. I recommend you at least familiarize yourself with the ions.

1-

Dihydrogen phosphate (H_2PO_4^-)

Hydrogen Sulfite or bisulfite (HSO_3^-)

Thiocyanate (SCN^-)

Hypobromite (BrO^-)

Bromite (BrO_2^-)

Bromate (BrO_3^-)

Perbromate (BrO_4^-)

Hypoiodite (IO^-)

Iodite (IO_2^-)

Periodate (IO_4^-)

2-

Hydrogen Phosphate (HPO_4^{2-})

Oxalate ($\text{C}_2\text{O}_4^{2-}$)

Peroxide (O_2^{2-})

Silicate (SiO_3^{2-})

3-

Arsenate (AsO_4^{3-})

Borate (BO_3^{3-})