

**Pre-AP Chemistry Summer Assignment**  
**For the 2017-2018 School Year**  
**Mrs. Lovel**

Pre-AP Chemistry students are expected to address certain selected topics independently during the summer in preparation for the class. Your summer assignment consists of the following: *1.) you will create flashcards for elements and their symbols, create flashcards for polyatomic ions and their formulas and charges, assemble these into two sets of flashcards each connected by a notebook ring, and turn these in the first day of school and 2.) take a test over the elements and their symbols and the polyatomic ions and their formulas and charges during the first week of school.*

The requirements for enrollment in Pre-AP Chemistry include the successful completion of the summer assignment for flash cards (work correctly completed and turned in on time,) and making a minimum grade of 70 on the test.

**Summer Assignment:**

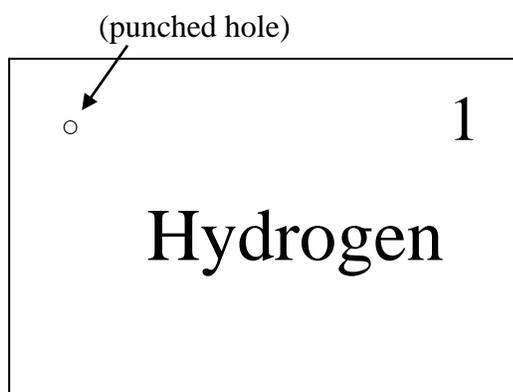
- 1. Create flash cards for the elements (Numbers 1-80) and the polyatomic ions (1-20).** You will turn in your flash cards on the first day of school. Instructions for making flash cards are given below. These flash cards are worth one daily grade. **Do not start out the year with a zero. Bring the flash cards on the first day of school.** I will check your flash cards and return them to you the following day.
- 2. Learn the elements' names and their symbols for the first 80 elements on the periodic table** (hydrogen through mercury). A list of the first 80 elements follows these instructions. Symbols are written in block capital letters with the first letter written in uppercase (capitalized) and the second letter written in lowercase. For example, hydrogen's symbol is H; helium's symbol is He. The name of the element does not have to be capitalized, but it must be spelled correctly to receive full credit on the exam. **You do not have to memorize the element's atomic number, only the element's name and its symbol.**
- 3. Learn the names, formulas, and charges of twenty polyatomic ions.** A list of these polyatomic ions is attached. The polyatomic ions' symbols and charges should be written as shown on the attached list. (The charge is the superscript in the upper right hand corner). For example, the symbol for the polyatomic ion *ammonium* is  $\text{NH}_4^{+1}$
- 4. You will be tested over the elements and their symbols and the names of the polyatomic ions, during the first week of school** (but **not** the first or second day you return to school). **This test will be a major grade.** On these tests the student will be given the element's name and asked to correctly write its symbol **or** may be given the symbol and asked to write the name of the element. For the polyatomic ions, the student will be given the polyatomic ion's formula (symbols, numerical subscript) and charge, and asked to write its name or may be given the polyatomic ion's name and asked to write its formula (symbols, numerical subscript) and charge. Names must be spelled correctly to receive full credit on the exam.

**Flashcards**

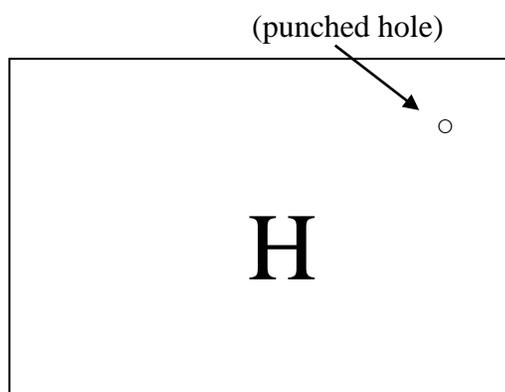
- To make your flashcards for the elements:
  - Use a 3×5 index card. These may be blank or lined.
  - Hand-write** the element's name in the middle of the card. Write large enough that this information can be easily read. Do not type, cut out or paste the information onto the

- card. Then **hand-write** the element's number (atomic number) in the upper right corner of the index card.
- Turn the index card over. On the back of the card, in the middle, **hand-write** the element's symbol.
- B. To make your flashcards for the polyatomic ions:
- Hand-write** the polyatomic ion's name in the middle of the card. Write large enough that this information can be easily read. Do not type, cut out or paste the information onto the card. Then **hand-write** the number of the polyatomic ion in the upper right corner of the index card.
  - Turn the index card over. On the back of the card, in the middle, **hand-write** the polyatomic ion's symbol, numerical subscript, and its charge (numerical superscript).
- C. To assemble your flashcards:
- Punch a hole in the upper left corner of each card.
  - Your first flash card will be your name, legibly handwritten.** It is not numbered.
  - Your second flash card begins with the elements. Put the cards in numerical order, that is, the same order as they appear in the periodic table, beginning with hydrogen and ending with mercury.
  - Hold all the cards together and in order by putting them on a notebook ring, which is placed through the hole in the upper left corner of the cards.
  - Create a second ring for the polyatomic ions just like you did for the polyatomic ions. **The first flash card will be your name, legibly handwritten.** It is not numbered.
  - Your second flash card begins with the polyatomic ions. Put the cards in numerical order.
- (Notebook rings and 3×5 index cards can be found at an office supply store, teacher supply store, or a store such as Walmart or Target).

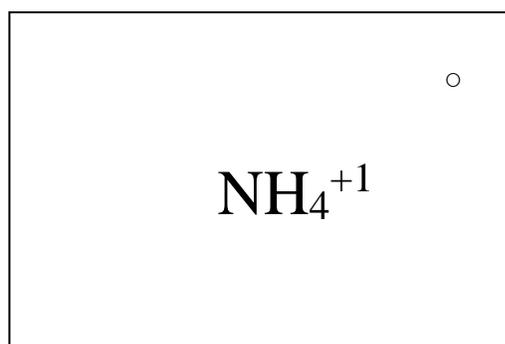
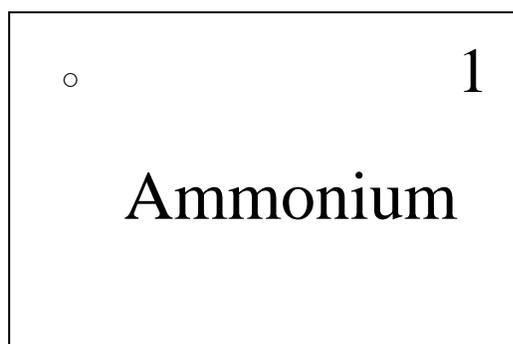
### Example Flash Cards



Front



Back



Use these flash cards to study for your test over the elements and their symbols and the test over the polyatomic ions and their formulas and charges. If you have any questions about your summer assignment you may email me at [lovelj@needvilleisd.com](mailto:lovelj@needvilleisd.com) . I will check my email during the summer. If you want me to call you back, please leave a phone number. I look forward to having you in class next year!

## Atomic Numbers, Elements, and Symbols

<u>Atomic Number</u>	<u>Symbol</u>	<u>Name</u>
1	H	Hydrogen
2	He	Helium
3	Li	Lithium
4	Be	Beryllium
5	B	Boron
6	C	Carbon
7	N	Nitrogen
8	O	Oxygen
9	F	Fluorine
10	Ne	Neon
11	Na	Sodium
12	Mg	Magnesium
13	Al	Aluminum
14	Si	Silicon
15	P	Phosphorus
16	S	Sulfur
17	Cl	Chlorine
18	Ar	Argon
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
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
55	Cs	Cesium
56	Ba	Barium
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
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

## POLYATOMIC IONS

<u>Name</u>	<u>Formula &amp; Charge</u>
1. Ammonium	$\text{NH}_4^{+1}$
2. Acetate	$\text{C}_2\text{H}_3\text{O}_2^{-1}$
3. Carbonate	$\text{CO}_3^{-2}$
4. Bicarbonate	$\text{HCO}_3^{-1}$ (This polyatomic ion is also known as hydrogen carbonate)
5. Chromate	$\text{CrO}_4^{-2}$
6. Dichromate	$\text{Cr}_2\text{O}_7^{-2}$
7. Cyanide	$\text{CN}^{-1}$
8. Hydroxide	$\text{OH}^{-1}$
9. Hydronium	$\text{H}_3\text{O}^{+1}$
10. Nitrate	$\text{NO}_3^{-1}$
11. Nitrite	$\text{NO}_2^{-1}$
12. Sulfate	$\text{SO}_4^{-2}$
13. Sulfite	$\text{SO}_3^{-2}$
14. Oxalate	$\text{C}_2\text{O}_4^{-2}$
15. Permanganate	$\text{MnO}_4^{-1}$
16. Phosphate	$\text{PO}_4^{-3}$
17. Perchlorate	$\text{ClO}_4^{-1}$
18. Chlorate	$\text{ClO}_3^{-1}$
19. Chlorite	$\text{ClO}_2^{-1}$
20. Hypochlorite	$\text{ClO}^{-1}$