

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

## Atoms vs. Ions worksheet

### Cations:

Have a positive charge

Have lost electrons

### Anions:

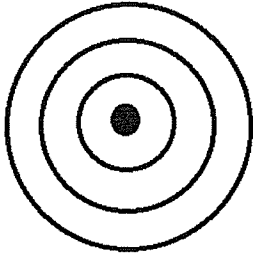
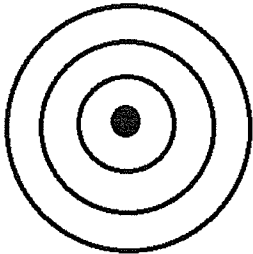
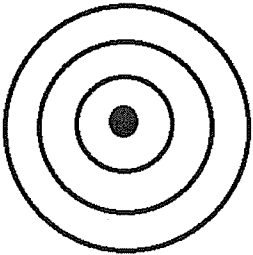
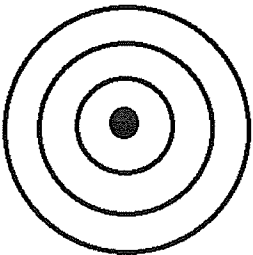
Have a negative charge

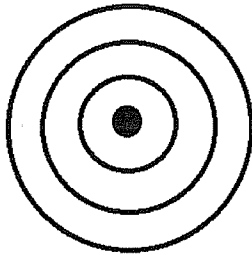
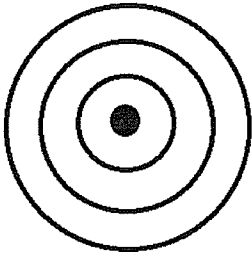
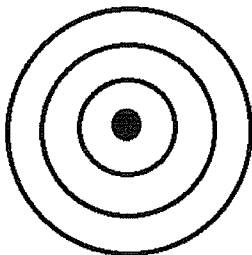
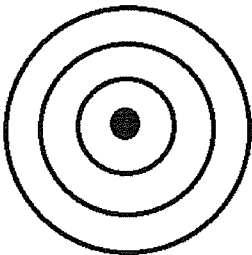
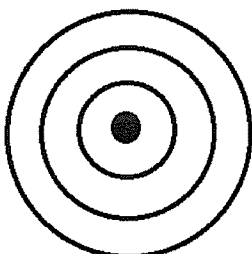
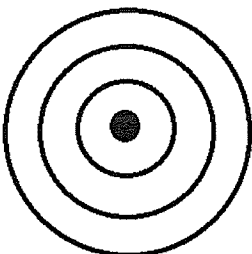
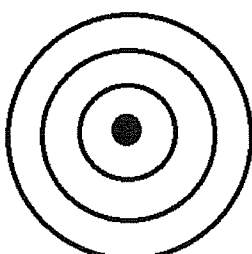
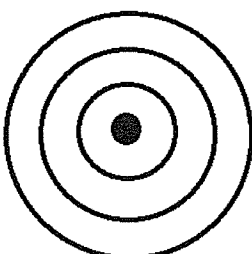
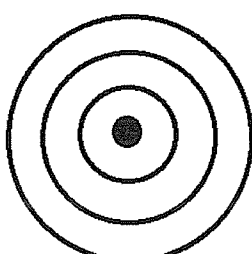
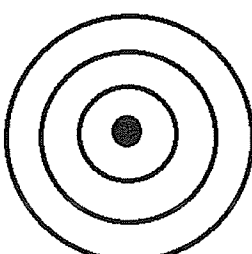
Have gained electrons

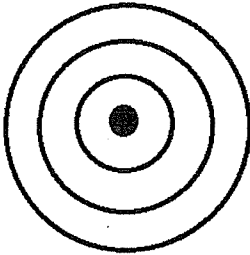
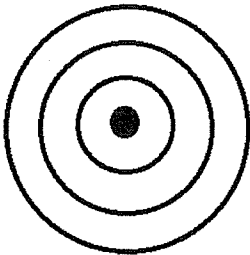
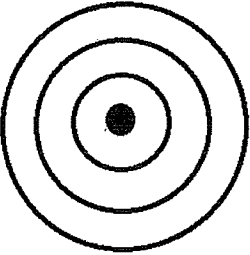
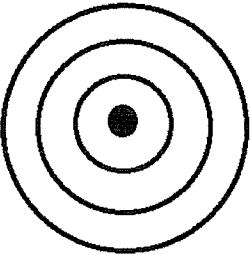
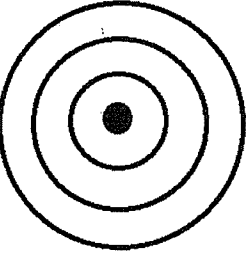
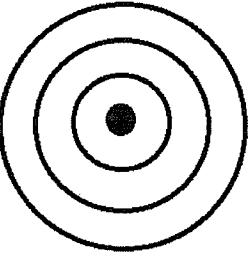
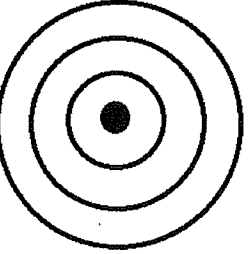
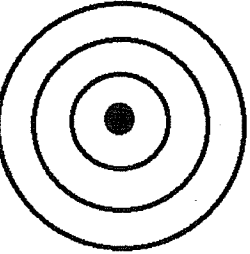
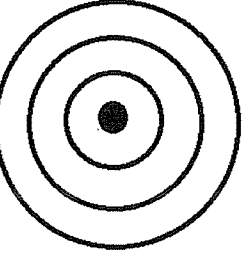
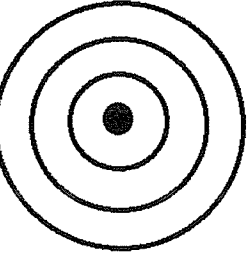
### Ion symbol:

To write the ion symbol, you must write the element symbol with the charge written on the top right.

Example:  $\text{Ca}^{2+}$ ,  $\text{Zn}^{2+}$ ,  $\text{Ag}^{1+}$

 		<b>Lithium atom</b>	<b>Lithium ion</b>
		Atomic number:	Atomic number:
		Mass number:	Mass number:
		Protons:	Protons:
		Neutrons:	Neutrons:
		Electrons:	Electrons:
		Cation/Anion:	Ion symbol:
 		<b>Beryllium atom</b>	<b>Beryllium ion</b>
		Atomic number:	Atomic number:
		Mass number:	Mass number:
		Protons:	Protons:
		Neutrons:	Neutrons:
		Electrons:	Electrons:
		Cation/Anion:	Ion symbol:

		<b>Boron atom</b>	<b>Boron ion</b>
		Atomic number:	Atomic number:
		Mass number:	Mass number:
		Protons:	Protons:
		Neutrons:	Neutrons:
		Electrons:	Electrons:
<b>Boron atom</b>	<b>Boron ion</b>	Cation/Anion:	Ion symbol:
		<b>Nitrogen atom</b>	<b>Nitrogen ion</b>
		Atomic number:	Atomic number:
		Mass number:	Mass number:
		Protons:	Protons:
		Neutrons:	Neutrons:
		Electrons:	Electrons:
<b>Nitrogen atom</b>	<b>Nitrogen ion</b>	Cation/Anion:	Ion symbol:
		<b>Oxygen atom</b>	<b>Oxygen ion</b>
		Atomic number:	Atomic number:
		Mass number:	Mass number:
		Protons:	Protons:
		Neutrons:	Neutrons:
		Electrons:	Electrons:
<b>Oxygen atom</b>	<b>Oxygen ion</b>	Cation/Anion:	Ion symbol:
		<b>Fluorine atom</b>	<b>Fluorine ion</b>
		Atomic number:	Atomic number:
		Mass number:	Mass number:
		Protons:	Protons:
		Neutrons:	Neutrons:
		Electrons:	Electrons:
<b>Fluorine atom</b>	<b>Fluorine ion</b>	Cation/Anion:	Ion symbol:
		<b>Sodium atom</b>	<b>Sodium ion</b>
		Atomic number:	Atomic number:
		Mass number:	Mass number:
		Protons:	Protons:
		Neutrons:	Neutrons:
		Electrons:	Electrons:
<b>Sodium atom</b>	<b>Sodium ion</b>	Cation/Anion:	Ion symbol:

		<b>Magnesium atom</b>	<b>Magnesium ion</b>
		Atomic number:	Atomic number:
		Mass number:	Mass number:
		Protons:	Protons:
		Neutrons:	Neutrons:
		Electrons:	Electrons:
<b>Magnesium atom</b>	<b>Magnesium ion</b>	Cation/Anion:	Ion symbol:
		<b>Aluminum atom</b>	<b>Aluminum ion</b>
		Atomic number:	Atomic number:
		Mass number:	Mass number:
		Protons:	Protons:
		Neutrons:	Neutrons:
		Electrons:	Electrons:
<b>Aluminum atom</b>	<b>Aluminum ion</b>	Cation/Anion:	Ion symbol:
		<b>Phosphorus atom</b>	<b>Phosphorus ion</b>
		Atomic number:	Atomic number:
		Mass number:	Mass number:
		Protons:	Protons:
		Neutrons:	Neutrons:
		Electrons:	Electrons:
<b>Phosphorus atom</b>	<b>Phosphorus ion</b>	Cation/Anion:	Ion symbol:
		<b>Sulfur atom</b>	<b>Sulfur ion</b>
		Atomic number:	Atomic number:
		Mass number:	Mass number:
		Protons:	Protons:
		Neutrons:	Neutrons:
		Electrons:	Electrons:
<b>Sulfur atom</b>	<b>Sulfur ion</b>	Cation/Anion:	Ion symbol:
		<b>Chlorine atom</b>	<b>Chlorine ion</b>
		Atomic number:	Atomic number:
		Mass number:	Mass number:
		Protons:	Protons:
		Neutrons:	Neutrons:
		Electrons:	Electrons:
<b>Chlorine atom</b>	<b>Chlorine ion</b>	Cation/Anion:	Ion symbol:

# Atoms and Ions Worksheet

Name \_\_\_\_\_ Period \_\_\_\_\_

Fill in the missing spaces in the charts below. Do **NOT** use your periodic table.

Element	Symbol	Atomic Number	Mass Number	Protons	Neutrons	Electrons
Carbon		6	14			
	O	8			10	
Potassium				19	20	
		19	41			
	$^{197}_{79}\text{Au}$					
Tin	Sn	50			68	
Zinc			64	30		
			66			30
			68	30		
Cobalt	Co	27			32	
Boron				5	6	
			10			5
	$^{56}_{26}\text{Fe}$					
		26			28	

Ion	Symbol	Atomic Number	Mass Number	Protons	Neutrons	Electrons
Iodine	$\text{I}^{-1}$		127	53		54
	$\text{Cl}^{-1}$		35	17		
Hydrogen			1	1		0
	$\text{Br}^{-1}$	35			46	
		35	79			36
	$\text{B}^{+3}$	5	11			
Oxygen	$\text{O}^{-2}$		16	8		
Nitrogen				7	7	10
Aluminum	$\text{Al}^{+3}$		27			10
	$\text{Fe}^{+2}$		56	26		24
	$\text{Cu}^{+1}$	29			34	
			63	29		27