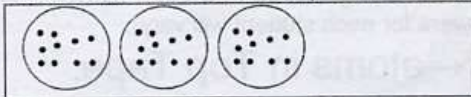




# ANSWERS

Period \_\_\_\_\_

Use the drawing below to answer #1 through #4 below.  
Each circle here is an atom, each dot is an electron



← atoms in sticky tape.  
(they are neutral)

- Warm up questions:
  - How many atoms are shown in the box above? 3
  - What is the correct term for each circle? (cation / neutral atom / anion)
  - What is the charge of a single •? (-1 / zero / +1)
  - If electrons are removed from these atoms the charge of the tape will become more (negative / positive)
- Using the neutral sticky tape atoms shown up at the top of this page as a reference point, draw appropriate numbers of electrons into each circle below.

an atom with two less electrons than a neutral tape atom

eight electrons

a cation with a charge of +1

nine electrons

an anion with a charge of -4

eleven electrons

a cation with a charge of +3

seven electrons

- Using the neutral sticky tape atoms above as a reference point, estimate the charge on each atom below.

The charge of this atom is (-2 / -1 / neutral / +1 / +2)

-2

The charge of this atom is (-2 / -1 / neutral / +1 / +2)

+1

The charge of this atom is (-2 / -1 / neutral / +1 / +2)

+1

The charge of this atom is PLUS TEN!

<p>4. A neutral nitrogen atom looks like this according to JJ Thomson's Plum Pudding Model:</p> <p>The charge is ( + / <u>zero</u> / - )</p>	<p>Thomson would say this is a picture of</p> <p>a) <u>the plum?</u></p> <p>b) the pudding?</p> <p>The charge is ( + / zero / - )</p>	<p>Thomson would say this is a picture of</p> <p>a) <u>the plum?</u></p> <p>b) <u>the pudding?</u></p> <p>The charge is ( + / zero / - )</p>
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213-11A

5. Pulling the "Top Tape" in our lab removed electrons from the Top Tape and added electrons to the Bottom Tape.

- a) This would cause the number of electrons in the Top Tape to (increase / decrease).
- b) This would cause the number of electrons in the Bottom Tape to (increase / decrease).
- c) Draw dots in each tape atom below to show your guess for how many electrons in the Top Tape and Bottom Tape (exact answers for each student will vary).



← atoms in Top Tape.  
(cations)



← atoms in Bottom Tape.  
(anions)

Use the following pictures of NEUTRAL atoms to answer the next four questions				
neutral Hydrogen	neutral lithium	neutral nitrogen	neutral oxygen	neutral fluorine

6. Draw enough dots (electrons) on each atom to create the object described

a fluorine anion with a charge of -1 **ten dots**

a Li<sup>+</sup> cation **two dots**

a nitrogen anion with a charge of -3 **ten dots**

a cation of hydrogen with a charge of +1 **NO DOTS**

<p>9. In each model of an atom shown here, what part would go flying to the right if it could be the cathode in Thomson's glass tube?</p>	<p>Which part?</p> <p>a) the soft, mushy part b) the seeds</p>	<p>Which part?</p> <p>a) the negative plums b) the positive pudding</p>	<p>Which part?</p> <p>a) the dough b) the chocolate chips</p>
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## Notebook Points:

3pts - Writing

2pts - Notebook Present

1pt - In seat

Purpose What are the properties of ionic and molecular substances?

Warmup

"KBr is an electrolyte.  
Draw it in water:"

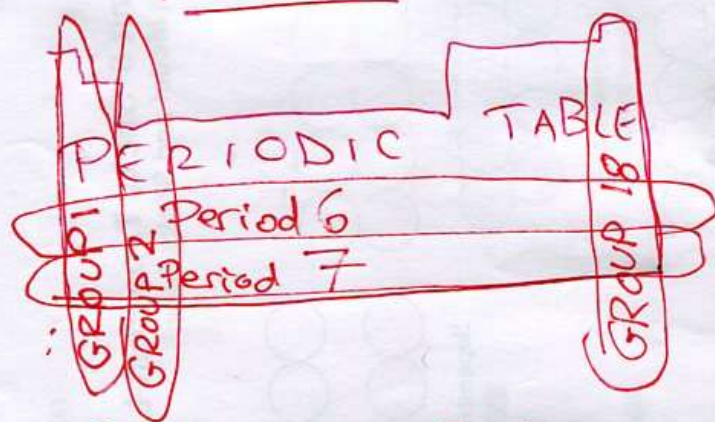




#1 THE PERIODIC TABLE  
HAS ROWS AND COLUMNS

COLUMNS ARE CALLED FAMILIES  
OR GROUPS

ROWS ARE CALLED  
PERIODS



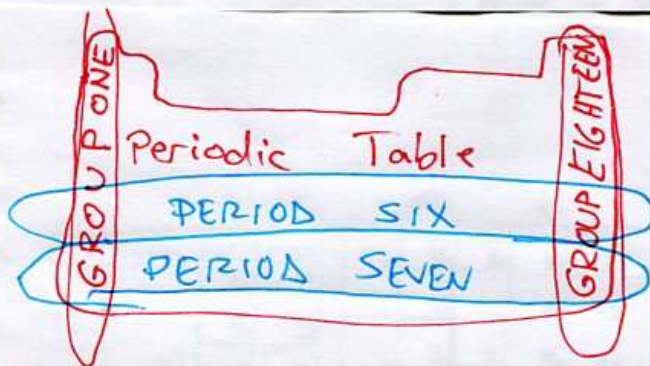
FOR EXAMPLE, SULFUR  
IS IN GROUP 16, PERIOD 3

# TABLE OF PERIODIC PROPERTIES OF THE ELEMENTS

GROUP																	GROUP	
1	H																	He
2	Li	Be											B	C	N	O	F	Ne
3	Na	Mg											Al	Si	P	S	Cl	Ar
4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
5	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
6	Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
7	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	
				Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	
				Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	

● = metal element  
■ = nonmetal element

SYMBOL KEY  
 Zn



GROUPS are columns on the periodic table. They are sometimes called FAMILIES  
PERIODS are rows (sideways)