

**Objective:** Explain how the periodic table is organized.

**The periodic table is arranged by similarities in the elements.**

By the mid-1800s about 60 elements were known. Today, \_\_\_\_\_ elements have been discovered (although element 117 was recently discovered, it must still go under a review process). In 1869, Dmitri Mendeleev made a table based on the element's \_\_\_\_\_. As important as this first step was, some of the elements were misplaced. In order for the table to be periodic (or appearing at regular intervals), the elements needed to be placed in groups on how they \_\_\_\_\_.

The table was later changed based on the element's \_\_\_\_\_ (the number of \_\_\_\_\_). When this was done, it fixed some of the problems in Mendeleev's table.

**Parts of the table have specific names**

Label the parts of the table below.

1																	2
H																	He
3	4											5	6	7	8	9	10
Li	Be											B	C	N	O	F	Ne
11	12											13	14	15	16	17	18
Na	Mg											Al	Si	P	S	Cl	Ar
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
55	56	57-71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86
Cs	Ba	Lanthanides	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
87	88	89-103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118
Fr	Ra	Actinides	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Uub	Uut	Uuq	Uup	Uuh	Uus	Uuo
Lanthanides		57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	
		La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	
Actinides		89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	
		Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	

**Period:** \_\_\_\_\_ across the periodic table. All of the elements in a row belong to the same period. There are \_\_\_\_\_ periods. The period number tells you the number of \_\_\_\_\_ that are found in any element in that period.

**Groups:** \_\_\_\_\_ going up and down on the periodic table. Each group is indicated by a number. That number tells you how many \_\_\_\_\_ are in the **valence** (except for the transition metals, marked with a B after the group number). Elements in each group are very similar and will react in similar ways.

Here are some popular groups you should be aware of:

**Alkali metals:** group 1, react with \_\_\_\_\_ (except hydrogen)

**Noble gasses:** group 8, have a full \_\_\_\_\_

**Try it Out**

Use the periodic table on page 11 of your assignment notebook to complete the information below.

Period	# of Shells	Element	Group	Valence
3	3	Chlorine (Cl)	7	7
		Arsenic (As)		
		Rubidium (Rb)		
		Lead (Pb)		

carbon 6 <b>C</b> 12.011	nitrogen 7 <b>N</b> 14.007	oxygen 8 <b>O</b> 15.999
silicon 14 <b>Si</b> 28.086	phosphorus 15 <b>P</b> 30.974	sulfur 16 <b>S</b> 32.065

This is a part of the periodic table.

1. Carbon has the same number of electron shells as \_\_\_\_\_
2. Oxygen has the same number of valence electrons as \_\_\_\_\_
3. Phosphorus will react in a similar way as \_\_\_\_\_