

Scientist: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

**Alien Periodic Table: Lab1**

**Objective:**

Create an alien periodic table based on chemical and physical properties and compare the arrangement of the alien periodic table elements to similar Earth elements.

**Background Information:**

In the early 19<sup>th</sup> century, scientists began arranging elements according to similar physical and chemical properties. The scientist who had the greatest success was a Russian chemist, Dmitri Mendeleev. He arranged the elements according to increasing atomic mass as well as in columns according to similar properties.

Imagine that scientists have made radio contact with life on a distant planet. The planet is composed of many of the same elements as are found on Earth. But the inhabitants of the planet have different names and symbols for the elements. The radio transmission gave data on the known chemical and physical properties of 30 that belong to Groups 1, 2, 13, 14, 15, 16, 17 and 18. You need to place the alien elements into a blank periodic table based on these properties.

**Periodic Table of the Elements**  
(based on <sup>12</sup>C = 12.000)

Group		Transition Metals										Representative Elements																																																																																																																																																																																																																																																																																																																																																																																																																										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18																																																																																																																																																																																																																																																																																																																																																																																																																					
1A	2A	3B	4B	5B	6B	7B	8B			1B	2B	3A	4A	5A	6A	7A	8A																																																																																																																																																																																																																																																																																																																																																																																																																					
1 H 1.008	2 He 4.003	3 Li 6.941	4 Be 9.012	5 B 10.811	6 C 12.011	7 N 14.007	8 O 15.999	9 F 18.998	10 Ne 20.180	11 Na 22.990	12 Mg 24.305	13 Al 26.982	14 Si 28.086	15 P 30.974	16 S 32.065	17 Cl 35.453	18 Ar 39.948																																																																																																																																																																																																																																																																																																																																																																																																																					
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3 Na 22.990	4 Mg 24.305	5 Al 26.982	6 Si 28.086	7 P 30.974	8 S 32.065	9 Cl 35.453	10 Ar 39.948	11 K 39.098	12 Ca 40.078	13 Sc 44.956	14 Ti 47.88	15 V 50.942	16 Cr 51.996	17 Mn 54.938	18 Fe 55.845	19 Co 58.933	20 Ni 58.693	21 Cu 63.546	22 Zn 65.38	23 Ga 69.723	24 Ge 72.63	25 As 74.922	26 Se 78.96	27 Br 79.904	28 Kr 83.80	29 Rb 85.468	30 Sr 87.62	31 Y 88.906	32 Zr 91.224	33 Nb 92.906	34 Mo 95.94	35 Tc 98.906	36 Ru 101.07	37 Rh 102.91	38 Pd 106.42	39 Ag 107.87	40 Cd 112.41	41 In 114.82	42 Sn 118.71	43 Sb 121.76	44 Te 127.6	45 I 126.91	46 Xe 131.29																																																																																																																																																																																																																																																																																																																																																																																											
4 K 39.098	5 Ca 40.078	6 Sc 44.956	7 Ti 47.88	8 V 50.942	9 Cr 51.996	10 Mn 54.938	11 Fe 55.845	12 Co 58.933	13 Ni 58.693	14 Cu 63.546	15 Zn 65.38	16 Ga 69.723	17 Ge 72.63	18 As 74.922	19 Se 78.96	20 Br 79.904	21 Kr 83.80	22 Rb 85.468	23 Sr 87.62	24 Y 88.906	25 Zr 91.224	26 Nb 92.906	27 Mo 95.94	28 Tc 98.906	29 Ru 101.07	30 Rh 102.91	31 Pd 106.42	32 Ag 107.87	33 Cd 112.41	34 In 114.82	35 Sn 118.71	36 Sb 121.76	37 Te 127.6	38 I 126.91	39 Xe 131.29	40 Ba 137.33	41 La 138.905	42 Ce 140.12	43 Pr 140.908	44 Nd 144.24	45 Pm 144.913	46 Sm 150.36	47 Eu 151.964	48 Gd 157.25	49 Tb 158.925	50 Dy 162.50	51 Ho 164.930	52 Er 167.259	53 Tm 168.930	54 Yb 173.054	55 Lu 174.967																																																																																																																																																																																																																																																																																																																																																																																			
5 Rb 85.468	6 Sr 87.62	7 Y 88.906	8 Zr 91.224	9 Nb 92.906	10 Mo 95.94	11 Tc 98.906	12 Ru 101.07	13 Rh 102.91	14 Pd 106.42	15 Ag 107.87	16 Cd 112.41	17 In 114.82	18 Sn 118.71	19 Sb 121.76	20 Te 127.6	21 I 126.91	22 Xe 131.29	23 Cs 132.905	24 Ba 137.33	25 La 138.905	26 Ce 140.12	27 Pr 140.908	28 Nd 144.24	29 Pm 144.913	30 Sm 150.36	31 Eu 151.964	32 Gd 157.25	33 Tb 158.925	34 Dy 162.50	35 Ho 164.930	36 Er 167.259	37 Tm 168.930	38 Yb 173.054	39 Lu 174.967	40 Hf 178.49	41 Ta 180.948	42 W 183.85	43 Re 186.207	44 Os 190.23	45 Ir 192.222	46 Pt 195.084	47 Au 196.967	48 Hg 200.59	49 Tl 204.38	50 Pb 207.2	51 Bi 208.98	52 Po 209	53 At 210	54 Rn 222																																																																																																																																																																																																																																																																																																																																																																																					
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336	94 Uuo 337	95 Uuq 338	96 Uub 339	97 Uut 340	98 Uuq 341	99 Uuh 342	100 Uuo 343	101 Uuq 344	102 Uub 345	103 Uut 346	104 Uuq 347	105 Uuh 348	106 Uuo 349	107 Uuq 350	108 Uub 351	109 Uut 352	110 Uuq 353	111 Uuh 354	112 Uuo 355	113 Uuq 356	114 Uub 357	115 Uut 358	116 Uuq 359	117 Uuh 360	118 Uuo 361	119 Uuq 362	120 Uub 363	121 Uut 364	122 Uuq 365	123 Uuh 366	124 Uuo 367	125 Uuq 368	126 Uub 369	127 Uut 370	128 Uuq 371	129 Uuh 372	130 Uuo 373	131 Uuq 374	132 Uub 375	133 Uut 376	134 Uuq 377	135 Uuh 378	136 Uuo 379	137 Uuq 380	138 Uub 381	139 Uut 382	140 Uuq 383	141 Uuh 384	142 Uuo 385	143 Uuq 386	144 Uub 387	145 Uut 388	146 Uuq 389	147 Uuh 390	148 Uuo 391	149 Uuq 392	150 Uub 393	151 Uut 394	152 Uuq 395	153 Uuh 396	154 Uuo 397	155 Uuq 398	156 Uub 399	157 Uut 400	158 Uuq 401	159 Uuh 402	160 Uuo 403	161 Uuq 404	162 Uub 405	163 Uut 406	164 Uuq 407	165 Uuh 408	166 Uuo 409	167 Uuq 410	168 Uub 411	169 Uut 412	170 Uuq 413	171 Uuh 414	172 Uuo 415	173 Uuq 416	174 Uub 417	175 Uut 418	176 Uuq 419	177 Uuh 420	178 Uuo 421	179 Uuq 422	180 Uub 423	181 Uut 424	182 Uuq 425	183 Uuh 426	184 Uuo 427	185 Uuq 428	186 Uub 429	187 Uut 430	188 Uuq 431	189 Uuh 432	190 Uuo 433	191 Uuq 434	192 Uub 435	193 Uut 436	194 Uuq 437	195 Uuh 438	196 Uuo 439	197 Uuq 440	198 Uub 441	199 Uut 442	200 Uuq 443	201 Uuh 444	202 Uuo 445	203 Uuq 446	204 Uub 447	205 Uut 448	206 Uuq 449	207 Uuh 450	208 Uuo 451	209 Uuq 452	210 Uub 453	211 Uut 454	212 Uuq 455	213 Uuh 456	214 Uuo 457	215 Uuq 458	216 Uub 459	217 Uut 460	218 Uuq 461	219 Uuh 462	220 Uuo 463	221 Uuq 464	222 Uub 465	223 Uut 466	224 Uuq 467	225 Uuh 468	226 Uuo 469	227 Uuq 470	228 Uub 471	229 Uut 472	230 Uuq 473	231 Uuh 474	232 Uuo 475	233 Uuq 476	234 Uub 477	235 Uut 478	236 Uuq 479	237 Uuh 480	238 Uuo 481	239 Uuq 482	240 Uub 483	241 Uut 484	242 Uuq 485	243 Uuh 486	244 Uuo 487	245 Uuq 488	246 Uub 489	247 Uut 490	248 Uuq 491	249 Uuh 492	250 Uuo 493	251 Uuq 494	252 Uub 495	253 Uut 496	254 Uuq 497	255 Uuh 498	256 Uuo 499	257 Uuq 500	258 Uub 501	259 Uut 502	260 Uuq 503	261 Uuh 504	262 Uuo 505	263 Uuq 506	264 Uub 507	265 Uut 508	266 Uuq 509	267 Uuh 510	268 Uuo 511	269 Uuq 512	270 Uub 513	271 Uut 514	272 Uuq 515	273 Uuh 516	274 Uuo 517	275 Uuq 518	276 Uub 519	277 Uut 520	278 Uuq 521	279 Uuh 522	280 Uuo 523	281 Uuq 524	282 Uub 525	283 Uut 526	284 Uuq 527	285 Uuh 528	286 Uuo 529	287 Uuq 530	288 Uub 531	289 Uut 532	290 Uuq 533	291 Uuh 534	292 Uuo 535	293 Uuq 536	294 Uub 537	295 Uut 538	296 Uuq 539	297 Uuh 540	298 Uuo 541	299 Uuq 542	300 Uub 543	301 Uut 544	302 Uuq 545	303 Uuh 546	304 Uuo 547	305 Uuq 548	306 Uub 549	307 Uut 550	308 Uuq 551	309 Uuh 552	310 Uuo 553	311 Uuq 554	312 Uub 555	313 Uut 556	314 Uuq 557	315 Uuh 558	316 Uuo 559	317 Uuq 560	318 Uub 561	319 Uut 562	320 Uuq 563	321 Uuh 564	322 Uuo 565	323 Uuq 566	324 Uub 567	325 Uut 568	326 Uuq 569	327 Uuh 570	328 Uuo 571	329 Uuq 572	330 Uub 573	331 Uut 574	332 Uuq 575	333 Uuh 576	334 Uuo 577	335 Uuq 578	336 Uub 579	337 Uut 580	338 Uuq 581	339 Uuh 582	340 Uuo 583	341 Uuq 584	342 Uub 585	343 Uut 586	344 Uuq 587	345 Uuh 588	346 Uuo 589	347 Uuq 590	348 Uub 591	349 Uut 592	350 Uuq 593	351 Uuh 594	352 Uuo 595	353 Uuq 596	354 Uub 597	355 Uut 598	356 Uuq 599	357 Uuh 600	358 Uuo 601	359 Uuq 602	360 Uub 603	361 Uut 604	362 Uuq 605	363 Uuh 606	364 Uuo 607	365 Uuq 608	366 Uub 609	367 Uut 610	368 Uuq 611	369 Uuh 612	370 Uuo 613	371 Uuq 614	372 Uub 615	373 Uut 616	374 Uuq 617	375 Uuh 618	376 Uuo 619	377 Uuq 620	378 Uub 621	379 Uut 622	380 Uuq 623	381 Uuh 624	382 Uuo 625	383 Uuq 626	384 Uub 627	385 Uut 628	386 Uuq 629	387 Uuh 630	388 Uuo 631	389 Uuq 632	390 Uub 633	391 Uut 634	392 Uuq 635	393 Uuh 636	394 Uuo 637	395 Uuq 638	396 Uub 639	397 Uut 640	398 Uuq 641	399 Uuh 642	400 Uuo 643	401 Uuq 644	402 Uub 645	403 Uut 646	404 Uuq 647	405 Uuh 648	406 Uuo 649	407 Uuq 650	408 Uub 651	409 Uut 652	410 Uuq 653	411 Uuh 654	412 Uuo 655	413 Uuq 656	414 Uub 657	415 Uut 658	416 Uuq 659	417 Uuh 660	418 Uuo 661	419 Uuq 662	420 Uub 663	421 Uut 664	422 Uuq 665	423 Uuh 666	424 Uuo 667	425 Uuq 668	426 Uub 669	427 Uut 670	428 Uuq 671