



Mission Assignment: Represent chemicals with symbols and formulae



KS3-02-05

PERIODIC TABLE OF THE ELEMENTS

1 **H**	1.0079 Hydrogen	2 **He**	4.0026 Helium	3 **Li**	6.941 Lithium	4 **Be**	9.0122 Beryllium	5 **B**	10.811 Boron	6 **C**	12.011 Carbon	7 **N**	14.007 Nitrogen	8 **O**	15.999 Oxygen	9 **F**	18.998 Fluorine	10 **Ne**	20.180 Neon	11 **Na**	22.990 Sodium	12 **Mg**	24.305 Magnesium	13 **Al**	26.986 Aluminum	14 **Si**	28.086 Silicon	15 **P**	30.974 Phosphorus	16 **S**	32.065 Sulfur	17 **Cl**	35.453 Chlorine	18 **Ar**	39.948 Argon	19 **K**	39.196 Potassium	20 **Ca**	40.078 Calcium	21 **Sc**	44.956 Scandium	22 **Ti**	47.867 Titanium	23 **V**	50.942 Vanadium	24 **Cr**	51.966 Chromium	25 **Mn**	54.938 Manganese	26 **Fe**	55.845 Iron	27 **Co**	58.933 Cobalt	28 **Ni**	58.993 Nickel	29 **Zn**	65.438 Zinc	30 **Ga**	69.723 Gallium	31 **Ge**	71.0079 Germanium	32 **As**	74.962 Arsenic	33 **Se**	78.936 Selenium	34 **Br**	79.904 Bromine	35 **Kr**	83.80 Krypton	36 **Xe**	131.29 Xenon	37 **Rn**	222 Radium	38 **Rb**	85.46 Rubidium	39 **Sr**	87.62 Strontium	40 **Zr**	91.224 Zirconium	41 **Nb**	92.966 Niobium	42 **Mo**	95.94 Molybdenum	43 **Tc**	98 Technetium	44 **Ru**	101.07 Ruthenium	45 **Rh**	102.91 Rhodium	46 **Pd**	106.42 Palladium	47 **Ag**	107.87 Silver	48 **Cd**	112.41 Cadmium	49 **In**	114.82 Indium	50 **Sn**	118.71 Tin	51 **Sb**	121.76 Antimony	52 **Te**	127.60 Tellurium	53 **I**	126.90 Iodine	54 **Xe**	131.29 Xenon	55 **At**	132.01 Astatine	56 **Po**	209 Polonium	57 **Pb**	207.2 Lead	58 **Bi**	208.98 Bismuth	59 **Pt**	204.38 Platinum	60 **Hg**	200.59 Mercury	61 **Au**	196.97 Gold	62 **Uuq**	289 Ununquadium	63 **Uub**	195.08 Ununbium	64 **Uut**	212 Ununtrium	65 **Uuu**	211 Unununium	66 **Dy**	162.5 Dysprosium	67 **Ho**	164.93 Holmium	68 **Er**	166.93 Erbium	69 **Tm**	168.93 Thulium	70 **Yb**	173.04 Ytterbium	71 **Lu**	170.09 Lutetium	72 **Y**	171.00 Yttrium	73 **Ta**	180.95 Tantalum	74 **W**	183.84 Tungsten	75 **Re**	186.21 Rhenium	76 **Os**	190.23 Osmium	77 **Ir**	192.22 Iridium	78 **Pt**	195.08 Platinum	79 **Au**	196.97 Gold	80 **Hg**	200.59 Mercury	81 **Tl**	204.38 Thallium	82 **Pb**	207.2 Lead	83 **Bi**	208.98 Bismuth	84 **Po**	209 Polonium	85 **At**	132.01 Astatine	86 **Rn**	222 Radium	87 **Fr**	223 Francium	88 **Ra**	226 Radium	89 - 103 **Ac - Lr**	261 Rutherfordium	104 **Rf**	262 Dubnium	105 **Db**	264 Binhium	106 **Sg**	266 Seaborgium	107 **Bh**	268 Bohrium	108 **Hs**	269 Hassium	109 **Mt**	271 Meitnerium	110 **Un**	272 Ununtrium	111 **Unuu**	190.79 Unununium	112 **Uun**	197.99 Ununbium	113 **Uut**	211 Ununtrium	114 **Uuu**	212 Unununium	115 **Uup**	289 Ununquadium	116 **Uuh**	199.99 Ununhexium	117 **Uuo**	211 Ununoctium	118 **Uuo**	258 Ununpentium	119 **Yb**	173.04 Ytterbium	120 **Lu**	170.09 Lutetium	121 **Y**	171.00 Yttrium	122 **Th**	232.04 Thorium	123 **Ac**	227 Actinide	124 **Pa**	231.04 Protactinium	125 **Th**	232.04 Thorium	126 **La**	138.91 Lanthanide	127 **Ce**	140.12 Cerium	128 **Pr**	144.91 Praseodymium	129 **Nd**	144.24 Neodymium	130 **Pm**	145 Promethium	131 **Sm**	150.36 Samarium	132 **Gd**	151.96 Gadolinium	133 **Eu**	151.96 Europium	134 **Bk**	157.25 Berkelium	135 **Cm**	247 Curium	136 **Am**	243 Americium	137 **Pu**	244 Plutonium	138 **Np**	237 Neptunium	139 **U**	238.03 Uranium	140 **Pa**	231.04 Protactinium	141 **Th**	232.04 Thorium	142 **La**	138.91 Lanthanide	143 **Ce**	140.12 Cerium	144 **Pr**	144.91 Praseodymium	145 **Nd**	144.24 Neodymium	146 **Pm**	145 Promethium	147 **Sm**	150.36 Samarium	148 **Gd**	151.96 Gadolinium	149 **Eu**	151.96 Europium	150 **Bk**	157.25 Berkelium	151 **Cm**	247 Curium	152 **Am**	243 Americium	153 **Pu**	244 Plutonium	154 **Np**	237 Neptunium	155 **U**	238.03 Uranium	156 **Pa**	231.04 Protactinium	157 **Th**	232.04 Thorium	158 **La**	138.91 Lanthanide	159 **Ce**	140.12 Cerium	160 **Pr**	144.91 Praseodymium	161 **Nd**	144.24 Neodymium	162 **Pm**	145 Promethium	163 **Sm**	150.36 Samarium	164 **Gd**	151.96 Gadolinium	165 **Eu**	151.96 Europium	166 **Bk**	157.25 Berkelium	167 **Cm**	247 Curium	168 **Am**	243 Americium	169 **Pu**	244 Plutonium	170 **Np**	237 Neptunium	171 **U**	238.03 Uranium	172 **Pa**	231.04 Protactinium	173 **Th**	232.04 Thorium	174 **La**	138.91 Lanthanide	175 **Ce**	140.12 Cerium	176 **Pr**	144.91 Praseodymium	177 **Nd**	144.24 Neodymium	178 **Pm**	145 Promethium	179 **Sm**	150.36 Samarium	180 **Gd**	151.96 Gadolinium	181 **Eu**	151.96 Europium	182 **Bk**	157.25 Berkelium	183 **Cm**	247 Curium	184 **Am**	243 Americium	185 **Pu**	244 Plutonium	186 **Np**	237 Neptunium	187 **U**	238.03 Uranium	188 **Pa**	231.04 Protactinium	189 **Th**	232.04 Thorium	190 **La**	138.91 Lanthanide	191 **Ce**	140.12 Cerium	192 **Pr**	144.91 Praseodymium	193 **Nd**	144.24 Neodymium	194 **Pm**	145 Promethium	195 **Sm**	150.36 Samarium	196 **Gd**	151.96 Gadolinium	197 **Eu**	151.96 Europium	198 **Bk**	157.25 Berkelium	199 **Cm**	247 Curium	200 **Am**	243 Americium	201 **Pu**	244 Plutonium	202 **Np**	237 Neptunium	203 **U**	238.03 Uranium	204 **Pa**	231.04 Protactinium	205 **Th**	232.04 Thorium	206 **La**	138.91 Lanthanide	207 **Ce**	140.12 Cerium	208 **Pr**	144.91 Praseodymium	209 **Nd**	144.24 Neodymium	210 **Pm**	145 Promethium	211 **Sm**	150.36 Samarium	212 **Gd**	151.96 Gadolinium	213 **Eu**	151.96 Europium	214 **Bk**	157.25 Berkelium	215 **Cm**	247 Curium	216 **Am**	243 Americium	217 **Pu**	244 Plutonium	218 **Np**	237 Neptunium	219 **U**	238.03 Uranium	220 **Pa**	231.04 Protactinium	221 **Th**	232.04 Thorium	222 **La**	138.91 Lanthanide	223 **Ce**	140.12 Cerium	224 **Pr**	144.91 Praseodymium	225 **Nd**	144.24 Neodymium	226 **Pm**	145 Promethium	227 **Sm**	150.36 Samarium	228 **Gd**	151.96 Gadolinium	229 **Eu**	151.96 Europium	230 **Bk**	157.25 Berkelium	231 **Cm**	247 Curium	232 **Am**	243 Americium	233 **Pu**	244 Plutonium	234 **Np**	237 Neptunium	235 **U**	238.03 Uranium	236 **Pa**	231.04 Protactinium	237 **Th**	232.04 Thorium	238 **La**	138.91 Lanthanide	239 **Ce**	140.12 Cerium	240 **Pr**	144.91 Praseodymium	241 **Nd**	144.24 Neodymium	242 **Pm**	145 Promethium	243 **Sm**	150.36 Samarium	244 **Gd**	151.96 Gadolinium	245 **Eu**	151.96 Europium	246 **Bk**	157.25 Berkelium	247 **Cm**	247 Curium	248 **Am**	243 Americium	249 **Pu**	244 Plutonium	250 **Np**	237 Neptunium	251 **U**	238.03 Uranium	252 **Pa**	231.04 Protactinium	253 **Th**	232.04 Thorium	254 **La**	138.91 Lanthanide	255 **Ce**	140.12 Cerium	256 **Pr**	144.91 Praseodymium	257 **Nd**	144.24 Neodymium	258 **Pm**	145 Promethium	259 **Sm**	150.36 Samarium	260 **Gd**	151.96 Gadolinium	261 **Eu**	151.96 Europium	262 **Bk**	157.25 Berkelium	263 **Cm**	247 Curium	264 **Am**	243 Americium	265 **Pu**	244 Plutonium	266 **Np**	237 Neptunium	267 **U**	238.03 Uranium	268 **Pa**	231.04 Protactinium	269 **Th**	232.04 Thorium	270 **La**	138.91 Lanthanide	271 **Ce**	140.12 Cerium	272 **Pr**	144.91 Praseodymium	273 **Nd**	144.24 Neodymium	274 **Pm**	145 Promethium	275 **Sm**	150.36 Samarium	276 **Gd**	151.96 Gadolinium	277 **Eu**	151.96 Europium	278 **Bk**	157.25 Berkelium	279 **Cm**	247 Curium	280 **Am**	243 Americium	281 **Pu**	244 Plutonium	282 **Np**	237 Neptunium	283 **U**	238.03 Uranium	284 **Pa**	231.04 Protactinium	285 **Th**	232.04 Thorium	286 **La**	138.91 Lanthanide	287 **Ce**	140.12 Cerium	288 **Pr**	144.91 Praseodymium	289 **Nd**	144.24 Neodymium	290 **Pm**	145 Promethium	291 **Sm**	150.36 Samarium	292 **Gd**	151.96 Gadolinium	293 **Eu**	151.96 Europium	294 **Bk**	157.25 Berkelium	295 **Cm**	247 Curium	296 **Am**	243 Americium	297 **Pu**	244 Plutonium	298 **Np**	237 Neptunium	299 **U**	238.03 Uranium	300 **Pa**	231.04 Protactinium	301 **Th**	232.04 Thorium	302 **La**	138.91 Lanthanide	303 **Ce**	140.12 Cerium	304 **Pr**	144.91 Praseodymium	305 **Nd**	144.24 Neodymium	306 **Pm**	145 Promethium	307 **Sm**	150.36 Samarium	308 **Gd**	151.96 Gadolinium	309 **Eu**	151.96 Europium	310 **Bk**	157.25 Berkelium	311 **Cm**	247 Curium	312 **Am**	243 Americium	313 **Pu**	244 Plutonium	314 **Np**	237 Neptunium	315 **U**	238.03 Uranium	316 **Pa**	231.04 Protactinium	317 **Th**	232.04 Thorium	318 **La**	138.91 Lanthanide	319 **Ce**	140.12 Cerium	320 **Pr**	144.91 Praseodymium	321 **Nd**	144.24 Neodymium	322 **Pm**	145 Promethium	323 **Sm**	150.36 Samarium	324 **Gd**	151.96 Gadolinium	325 **Eu**	151.96 Europium	326 **Bk**	157.25 Berkelium	327 **Cm**	247 Curium	328 **Am**	243 Americium	329 **Pu**	244 Plutonium	330 **Np**	237 Neptunium	331 **U**	238.03 Uranium	332 **Pa**	231.04 Protactinium	333 **Th**	232.04 Thorium	334 **La**	138.91 Lanthanide	335 **Ce**	140.12 Cerium	336 **Pr**	144.91 Praseodymium	337 **Nd**	144.24 Neodymium	338 **Pm**	145 Promethium	339 **Sm**	150.36 Samarium	340 **Gd**	151.96 Gadolinium	341 **Eu**	151.96 Europium	342 **Bk**	157.25 Berkelium	343 **Cm**	247 Curium	344 **Am**	243 Americium	345 **Pu**	244 Plutonium	346 **Np**	237 Neptunium	347 **U**	238.03 Uranium	348 **Pa**	231.04 Protactinium	349 **Th**	232.04 Thorium	350 **La**	138.91 Lanthanide	351 **Ce**	140.12 Cerium	352 **Pr**	144.91 Praseodymium	353 **Nd**	144.24 Neodymium	354 **Pm**	145 Promethium	355 **Sm**	150.36 Samarium	356 **Gd**	151.96 Gadolinium	357 **Eu**	151.96 Europium	358 **Bk**	157.25 Berkelium	359 **Cm**	247 Curium	360 **Am**	243 Americium	361 **Pu**	244 Plutonium	362 **Np**	237 Neptunium	363 **U**	238.03 Uranium	364 **Pa**	231.04 Protactinium	365 **Th**	232.04 Thorium	366 **La**	138.91 Lanthanide	367 **Ce**	140.12 Cerium	368 **Pr**	144.91 Praseodymium	369 **Nd**	144.24 Neodymium	370 **Pm**	145 Promethium	371 **Sm**	150.36 Samarium	372 **Gd**	151.96 Gadolinium	373 **Eu**	151.96 Europium	374 **Bk**	157.25 Berkelium	375 **Cm**	247 Curium	376 **Am**	243 Americium	377 **Pu**	244 Plutonium	378 **Np**	237 Neptunium	379 **U**	238.03 Uranium	380 **Pa**	231.04 Protactinium	381 **Th**	232.04 Thorium	382 **La**	138.91 Lanthanide	383 **Ce**	140.12 Cerium	384 **Pr**	144.91 Praseodymium	385 **Nd**	144.24 Neodymium	386 **Pm**	145 Promethium	387 **Sm**	150.36 Samarium	388 **Gd**	151.96 Gadolinium	389 **Eu**	151.96 Europium	390 **Bk**	157.25 Berkelium	391 **Cm**	247 Curium	392 **Am**	243 Americium	393 **Pu**	244 Plutonium	394 **Np**	237 Neptunium	395 **U**	238.03 Uranium	396 **Pa**	231.04 Protactinium	397 **Th**	232.04 Thorium	398 **La**	138.91 Lanthanide	399 **Ce**	140.12 Cerium	400 **Pr**	144.91 Praseodymium	401 **Nd**	144.24 Neodymium	402 **Pm**	145 Promethium	403 **Sm**	150.36 Samarium	404 **Gd**	151.96 Gadolinium	405 **Eu**	151.96 Europium	406 **Bk**	157.25 Berkelium	407 **Cm**	247 Curium	408 **Am**	243 Americium	409 **Pu**	244 Plutonium	410 **Np**	237 Neptunium	411 **U**	238.03 Uranium	412 **Pa**	231.04 Protactinium	413 **Th**	232.04 Thorium	414 **La**	138.91 Lanthanide	415 **Ce**	140.12 Cerium	416 **Pr**	144.91 Praseodymium	417 **Nd**	144.24 Neodymium	418 **Pm**	145 Promethium	419 **Sm**	150.36 Samarium	420 **Gd**</td



Elementary! What's on the Periodic Table

Questions

1. What is the chemical symbol for hydrogen? _____
2. What is the chemical symbol for potassium? _____
3. What is the chemical symbol for magnesium? _____
4. What is the chemical symbol for iron? _____
5. What is the chemical symbol for sulfur? _____
6. What is the chemical symbol for radon? _____
7. Which element is represented by Pt? _____
8. Which element is represented by Bi? _____
9. Which element is represented by W? _____
10. Which element is represented by Pb? _____
11. Which element is represented by Hg? _____
12. Which element is represented by Ra? _____
13. Which element is represented by Sb? _____
14. Which element is represented by Po? _____

For the following compounds, identify which elements, and how many atoms of each element, are in the compound.

1. CO _____
2. H_2SO_4 _____
3. CH_4 _____
4. NaOH _____
5. Al_2Cl_3 _____
6. H_3PO_4 _____
7. $\text{Mg}(\text{OH})_2$ _____

Challenge

Can you write the formula of carbon dioxide, sulfur trioxide and nitrogen monoxide using only the names?



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Elementary! What's on the Periodic Table

You can use element symbols to make words e.g.



The symbols from Helium, Lithium, Cobalt, Platinum and Erbium spell out HeLiCoPtEr

Write out the elements and their symbols to create a word. Remember the first letter should always be a capital letter and the second (if there is one) lower case.

Challenge

Challenge

What is the longest word that you can make?



Elementary! What's on the Periodic Table

Alphabetical list of element symbols

Ac	Actinium	Cd	Cadmium	Fe	Iron	Kr	Krypton
Ag	Silver	Ce	Cerium	Fl	Flerovium	La	Lanthanum
Al	Aluminium	Cf	Californium	Fm	Fermium	Li	Lithium
Am	Americium	Cl	Chlorine	Fr	Francium	Lr	Lawrencium
Ar	Argon	C m	Curium	Ga	Gallium	Lu	Lutetium
As	Arsenic	Cn	Copernicium	Gd	Gadolinium	Lv	Livermorium
At	Astatine	Co	Cobalt	Ge	Germanium	Mc	Moscovium
Au	Gold	Cr	Chromium	H	Hydrogen	Md	Mendelevium
B	Boron	Cs	Caesium	He	Helium	Mg	Magnesium
Ba	Barium	Cu	Copper	Hf	Hafnium	Mn	Manganese
Be	Beryllium	Db	Dubnium	Hg	Mercury	Mo	Molybdenum
Bh	Bohrium	Ds	Darmstadtium	Ho	Holmium	Mt	Meitnerium
Bi	Bismuth	Dy	Dysprosium	Hs	Hassium	N	Nitrogen
Bk	Berkelium	Er	Erbium	I	Iodine	Na	Sodium
Br	Bromine	Es	Einsteinium	In	Indium	Nb	Niobium
C	Carbon	Eu	Europium	Ir	Iridium	Nd	Neodymium
Ca	Calcium	F	Fluorine	K	Potassium	Ne	Neon



Elementary! What's on the Periodic Table

Alphabetical list of element symbols

Nh	Nihonium	Rb	Rubidium	Tb	Terbium
Ni	Nickel	Re	Rhenium	Tc	Technetium
No	Nobelium	Rf	Rutherfordium	Te	Tellurium
Np	Neptunium	Rg	Roentgenium	Th	Thorium
O	Oxygen	Rh	Rhodium	Ti	Titanium
Og	Oganesson	Rn	Radon	Tl	Thallium
Os	Osmium	Ru	Ruthenium	Tm	Thulium
P	Phosphorus	S	Sulfur	Ts	Tennessine
Pa	Protactinium	Sb	Antimony	U	Uranium
Pb	Lead	Sc	Scandium	V	Vanadium
Pd	Palladium	Se	Selenium	W	Tungsten
Pm	Palladium	Sg	Seaborgium	Xe	Xenon
Po	Polonium	Si	Silicon	Y	Yttrium
Pr	Praseodymium	Sm	Samarium	Yb	Ytterbium
Pt	Platinum	Sn	Tin	Zn	Zinc
Pu	Plutonium	Sr	Strontium	Zr	Zirconium
Ra	Radium	Ta	Tantalum		



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4. What is the chemical symbol for iron?
5. What is the chemical symbol for sulfur?
6. What is the chemical symbol for radon?
7. Which element is represented by Pt?
8. Which element is represented by Bi?
9. Which element is represented by W?
10. Which element is represented by Pb?
11. Which element is represented by Hg?
12. Which element is represented by Ra?
13. Which element is represented by Sb?
14. Which element is represented by Po?

H _____

K _____

Mg _____

Fe _____

S _____

Rn _____

Platinum _____

Bismuth _____

Tungsten _____

Lead _____

Mercury _____

Radium _____

Antimony _____

polonium _____

For the following compounds, identify which elements, and how many atoms of each element, are in the compound.

1. CO 1 x carbon and 1 x oxygen
2. H_2SO_4 2 x hydrogen, 1 x sulfur and 4 x oxygen
3. CH_4 1 x carbon and 4 x hydrogen
4. NaOH 1 x sodium, 1 x oxygen and 1 x hydrogen
5. Al_2Cl_3 2 x aluminium and 3 x chlorine
6. H_3PO_4 3 x hydrogen, 1 x phosphorus and 4 x oxygen
7. $\text{Mg}(\text{OH})_2$ 1 x magnesium, 2 x oxygen and 2 x hydrogen

Challenge

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Student's own answer – website <https://scienzenotes.org/list-words-made-periodic-table-element-symbols/>