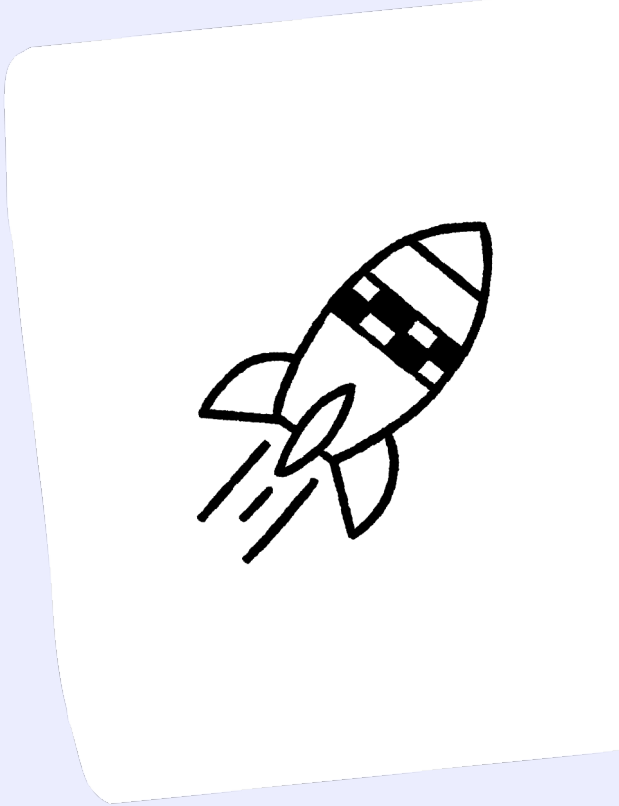
Kooxaha curiye (element) ee miiska xilliyeedka (periodic table)



Sayniska

Cutub: Qaababka miiska xilliyeedka (periodic table)

cashar.so

Natiijo

Waxaan aqoonsan karaa oo sharxi karaa sifooyinka kooxaha kala duwan ee curiye (element) ee miiska xilliyeedka (periodic table).

cashar.so

Erayada muhiimka ah

miiska xilliyeedka (periodic table)

koox (group)

xilli (period)

biro kala-guur ah (transition metals)

cashar.so

Erayada muhiimka ah

Miiska xilliyeedka (periodic table) waa liis dhammaan curiye (element) la yaqaan, oo loo habeeyey kororka tirada atomiga (atomic number). Waxaa loo qaybiyaa tiirar toosan oo la yiraahdo kooxo (groups), iyo safar jiif ah oo la yiraahdo xilli (periods).

Koox (group) waa tiir ku yaal miiska xilliyeedka (periodic table) oo u dhigma tirada elektaroonnada (electrons) ee qolofka kore ee atomka.

Xilli (period) waa saf jiif ah oo ku yaal miiska xilliyeedka (periodic table). Xilli kastaa wuxuu u dhigmaa tirada qolofka elektaroonnada (electrons) ee atomka curiye (element).

Biro kala-guur ah (transition metals) waa koox biro ah oo laga helo qaybta dhexe ee miiska xilliyeedka (periodic table).

cashar.so

Kooxaha curiye (element) ee miiska xilliyeedka (periodic table)

- Aasaaska miiska xilliyeedka (periodic table)
- Sahminta kooxaha (groups) iyo sifooyinka

Aasaaska miiska xilliyeedka (periodic table)

Sharaxaad

Miiska xilliyeedka (periodic table) waa jaantus dhammaan curiye (element) kiimikooyinka la yaqaan, oo hadda gaaraya 118.

Key

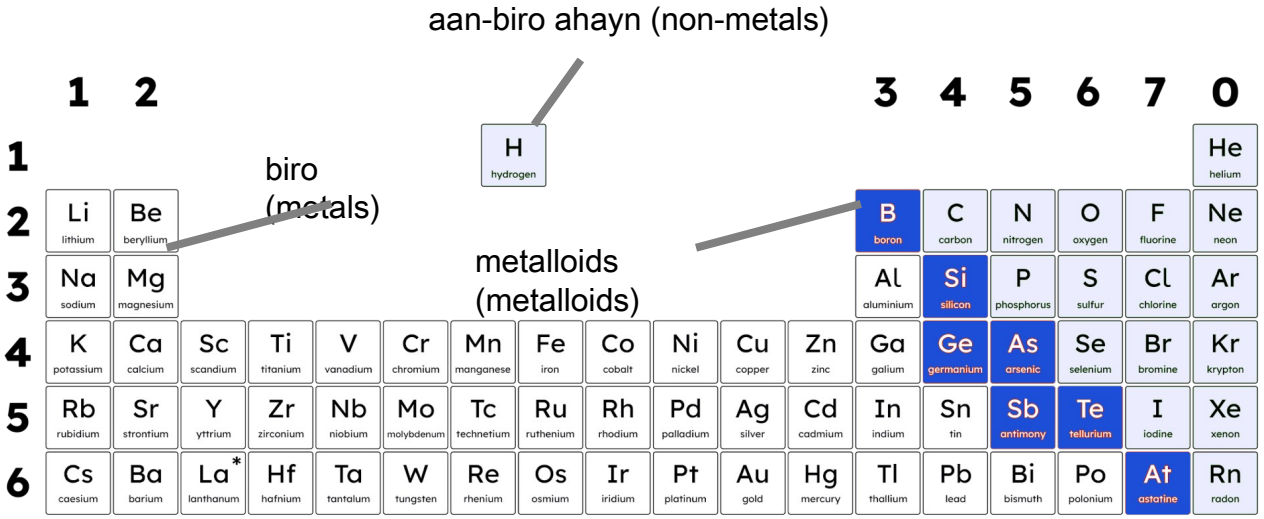
relative atomic mass
atomic symbol
name
atomic (proton) number

							1 H hydrogen 1										4 He helium 2
7 Li lithium 3	9 Be beryllium 4											11 B boron 5	12 C carbon 6	14 N nitrogen 7	16 O oxygen 8	19 F fluorine 9	20 Ne neon 10
23 Na sodium 11	24 Mg magnesium 12											27 Al aluminium 13	28 Si silicon 14	31 P phosphorus 15	32 S sulfur 16	35.5 Cl chlorine 17	40 Ar argon 18
39 K potassium 19	40 Ca calcium 20	45 Sc scandium 21	48 Ti titanium 22	51 V vanadium 23	52 Cr chromium 24	55 Mn manganese 25	56 Fe iron 26	59 Co cobalt 27	59 Ni nickel 28	63.5 Cu copper 29	65 Zn zinc 30	70 Ga galium 31	73 Ge germanium 32	75 As arsenic 33	79 Se selenium 34	80 Br bromine 35	84 Kr krypton 36
85 Rb rubidium 37	88 Sr strontium 38	89 Y yttrium 39	91 Zr zirconium 40	93 Nb niobium 41	96 Mo molybdenum 42	[98] Tc technetium 43	101 Ru ruthenium 44	103 Rh rhodium 45	106 Pd palladium 46	108 Ag silver 47	112 Cd cadmium 48	115 In indium 49	119 Sn tin 50	122 Sb antimony 51	128 Te tellurium 52	127 I iodine 53	131 Xe xenon 54
133 Cs caesium 55	137 Ba barium 56	139 * La lanthanum 57	178 Hf hafnium 72	181 Ta tantalum 73	184 W tungsten 74	186 Re rhenium 75	190 Os osmium 76	192 Ir iridium 77	195 Pt platinum 78	197 Au gold 79	201 Hg mercury 80	204 Tl thallium 81	207 Pb lead 82	209 Bi bismuth 83	[209] Po polonium 84	[210] At astatine 85	[222] Rn radon 86
[223] Fr francium 87	[226] Ra radium 88	[227] * Ac actinium 89	[261] Rf rutherfordium 104	[262] Db dubnium 105	[266] Sg seaborgium 106	[264] Bh bohrium 107	[277] Hs hassium 108	[268] Mt meitnerium 109	[271] Ds darmstadtium 110	[272] Rg roentgenium 111	[285] Cn copernicium 112	[286] Nh nihonium 113	[289] Fl flevorium 114	[289] Mc moscovium 115	[293] Lv livermorium 116	[294] Ts tennessine 117	[294] Og oganesson 118

*Elements with atomic numbers 58-71 and 90-103 have been omitted from this periodic table.

Aasaaska miiska xilliyeedka (periodic table)

Ilaa hadda, waxaad aragtay in miiska xilliyeedka (periodic table) loo qaybin karo biro, aan-biro ahayn, iyo metalloids:



Si kastaba ha ahaatee, kani ma aha qaabka ugu weyn ee saynisyahannadu u kala qaybiyaan curiye (element) ee miiska xilliyeedka (periodic table).

Aasaaska shaxda xilliyeed (Foundations of the periodic table)

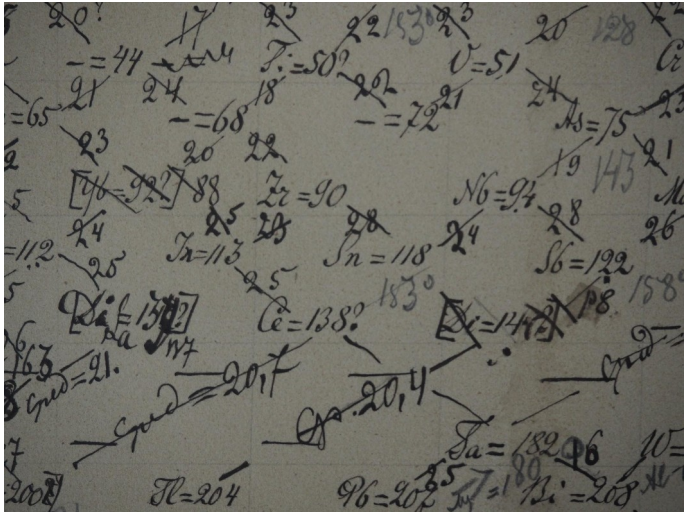
Sharaxaad

Sannadkii 1869, Dmitri Mendeleev wuxuu 10 sano ku qaatay isagoo isku dayaya inuu nidaamiyo curiyeyaasha (elements). Waqtigaas, waxaa jiray 63 curiye (elements) oo la yaqaan.

Sheekadu waxay sheegaysaa inuu shaxdiisa xilliyeed (periodic table) ku abuuray isagoo magaca curiye kasta (element) iyo miisaankiisa atomiga (atomic weight) ku qoray kaar.

Kadib wuxuu ciyaaray ciyaar 'solitaire kiimiko' (chemical solitaire).

Ugu dambayntii, wuxuu ku riyooday nidaamka curiyeyaasha (elements).

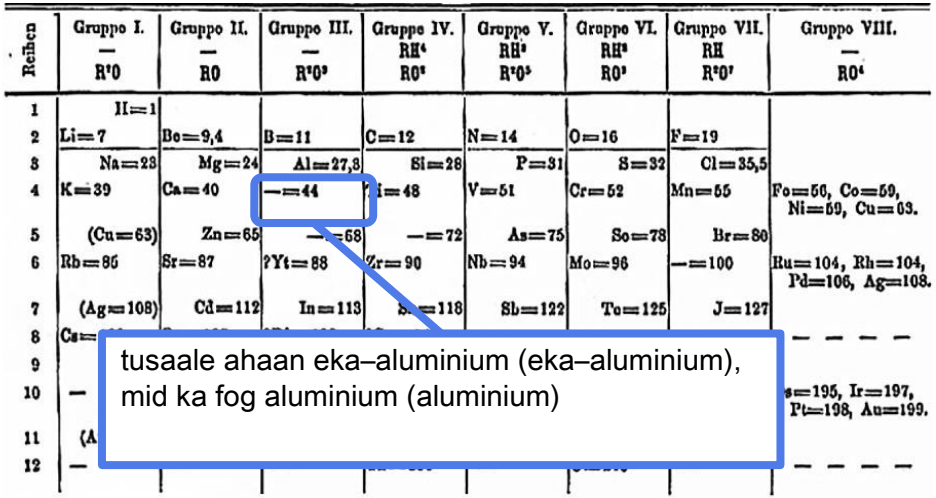


Qoraallada Mendeleev ee kala-saarista curiyeyaasha (elements)

Mendeleev wuxuu soo jeediyay qaabka ugu aqbalinta badan ee habaynta curiyeyaasha (elements).

Wuxuu tan ku sameeyay isagoo:

- gelinaya curiyeyaasha (elements) shax isagoo adeegsanaya sifooyinkooda iyo miisaannadooda atomiga (atomic weights)
- kala-saaraya 7 kooxood (groups)
- ka tagaya meelo bannaan oo loogu talagalay curiyeyaasha (elements) aan la helin
- saadaalinaya sifooyinka curiyeyaasha (elements) aan la helin



Reihen	Gruppo I. — R^2O	Gruppo II. — RO	Gruppo III. — R^2O^3	Gruppo IV. RH^4 RO^2	Gruppo V. RH^3 R^2O^5	Gruppo VI. RH^2 RO^3	Gruppo VII. RH R^2O^7	Gruppo VIII. — RO^4
1	H=1							
2	Li=7	Be=9,4	B=11	C=12	N=14	O=16	F=19	
3	Na=23	Mg=24	Al=27,3	Si=28	P=31	S=32	Cl=35,5	
4	K=39	Ca=40	—=44	?i=48	V=51	Cr=52	Mn=55	Fe=56, Co=59, Ni=59, Cu=63.
5	(Cu=63)	Zn=65	—=68	—=72	As=75	Se=78	Br=80	
6	Rb=85	Sr=87	?Yt=88	Zr=90	Nb=94	Mo=96	—=100	Ru=104, Rh=104, Pd=106, Ag=108.
7	(Ag=108)	Cd=112	In=113	[illegible]=118	Sb=122	Te=125	J=127	
8	Cs=							— — — —
9								
10	—							[illegible]s=195, Ir=197, Pt=198, Au=199.
11	(A							
12	—							— — — —

tusaale ahaan eka–aluminium (eka–aluminium), mid ka fog aluminium (aluminium)

Curiyeyaasha (elements) aan la helin waxaa loo magacaabay horgale "eka-" oo ka yimid Sanskrit oo macneheedu yahay "mid".

OpenStax, via Wikimedia Commons CC BY–SA 4.0

Run mise been?

Mendeleev wuxuu soo jeediyay qaab nidaaminta curiyeyaasha (elements) oo ku lug lahaa isku-gelinta.

T Run ✓

F Been

Sabab u sheeg jawaabtaada

a Wuxuu u nidaamiyay bir (metals), aan bir ahayn (non-metals) iyo metalloids (metalloids).

b Wuxuu u nidaamiyay sifooyinkooda iyo miisaannadooda atomiga (atomic weights).

✓

Aasaaska shaxda xilliyeedka (periodic table)

Curiyeyaasha (Elements) waxay ka kooban yihiin hal nooc oo walxaha (particles) ah oo loo yaqaan atam (atoms). Markii Mendeleev sameeyay shaxdiisa xilliyeed (periodic table), atam (atoms) waa la soo jeediyay, laakiin si buuxda looma fahmin.

Cilmi-baaris (scientific research) ayaa na baray in atamka ay ka kooban yihiin qaybo yaryar oo loo yaqaan:

- protons
- neutrons
- electrons

Curiye (element) kastaa wuxuu leeyahay tiro ka duwan oo ah qaybahan.

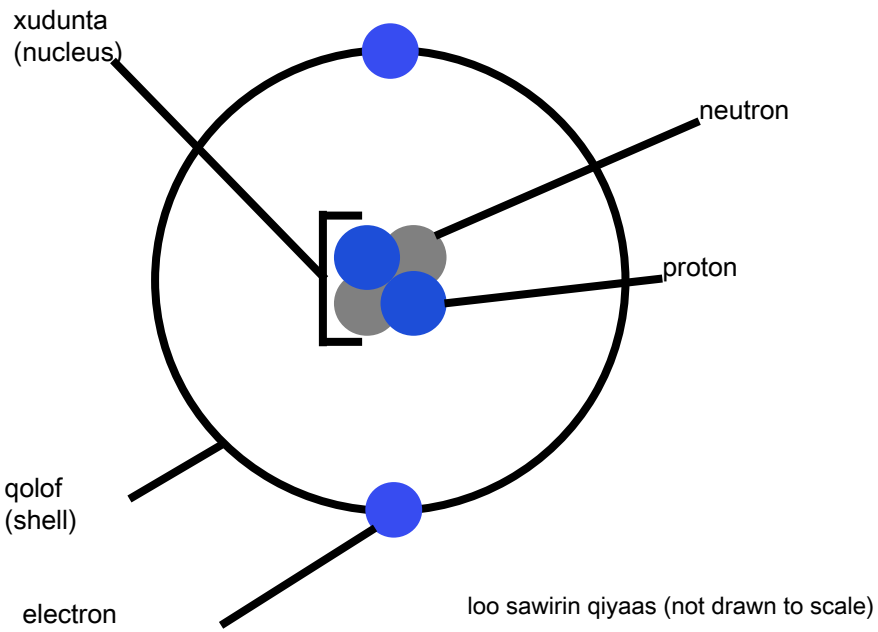
Aasaaska shaxda xilliyeedka (periodic table)

Sharaxaad

Atamku wuxuu ka kooban yahay:

- xudun (nucleus) oo ku taal bartamaha atamka
- qolofta (shells) ee ku wareegsan xudunta (nucleus)

Shaxda xilliyeedka (periodic table) waxay noo sheegtaa macluumaad ku filan oo ku saabsan curiye (element) kasta si loo ogaado inta proton, neutron iyo electron uu atam kastaa leeyahay.



loo sawirin qiyaas (not drawn to scale)

Aasaaska shaxda xilliyeedka (periodic table)

Sharaxaad

Shaxda xilliyeedka (periodic table) waxay leedahay safaf loo yaqaan periods, iyo tiirar loo yaqaan groups.

tirada elektaroonnada ee qolofka kore (number of electrons in outer shell)

tirada qolofta (shells) ee ay ku jiraan electrons

Key

relative atomic mass
atomic symbol
name
atomic (proton) number

	1	2											3	4	5	6	7	0
1	1 H hydrogen 1																	
2	7 Li lithium 3	9 Be beryllium 4											11 B boron 5	12 C carbon 6	14 N nitrogen 7	16 O oxygen 8	19 F fluorine 9	20 Ne neon 10
3	23 Na sodium 11	24 Mg magnesium 12											27 Al aluminium 13	28 Si silicon 14	31 P phosphorus 15	32 S sulfur 16	35.5 Cl chlorine 17	40 Ar argon 18
4	39 K potassium 19	40 Ca calcium 20	45 Sc scandium 21	48 Ti titanium 22	51 V vanadium 23	52 Cr chromium 24	55 Mn manganese 25	56 Fe iron 26	59 Co cobalt 27	59 Ni nickel 28	63.5 Cu copper 29	65 Zn zinc 30	70 Ga gallium 31	73 Ge germanium 32	75 As arsenic 33	79 Se selenium 34	80 Br bromine 35	84 Kr krypton 36
5	85 Rb rubidium 37	88	89	91	93	96	[98]	101	103 h dium 5	106 Pd palladium 46	108 Ag silver 47	112 Cd cadmium 48	115 In indium 49	119 Sn tin 50	122 Sb antimony 51	128 Te tellurium 52	127 I iodine 53	131 Xe xenon 54
6	133 Cs caesium 55								192 r ium 7	195 Pt platinum 78	197 Au gold 79	201 Hg mercury 80	204 Tl thallium 81	207 Pb lead 82	209 Bi bismuth 83	[209] Po polonium 84	[210] At astatine 85	[222] Rn radon 86
7	[223] Fr francium 87	[226] Ra radium 88	[227] * Ac actinium 89	[261] Rf rutherfordium 104	[262] Db dubnium 105	[266] Sg seaborgium 106	[264] Bh bohrium 107	[277] Hs hassium 108	[268] Mt meitnerium 109	[271] Ds darmstadtium 110	[272] Rg roentgenium 111	[285] Cn copernicium 112	[286] Nh nihonium 113	[289] Fl flevorium 114	[289] Mc moscovium 115	[293] Lv livermorium 116	[294] Ts tennessine 117	[294] Og oganesson 118

Jawaabaha:

Run mise been?

Saf kasta oo ka mid ah Shaxda Xilliyeedka (periodic table) waxaa loo yaqaan koox (group).

T **Run**

F **Been** ✓

Sabab u sheeg jawaabtaada

a Shaxda Xilliyeedka (periodic table) waxaa loo kala saarayaa biraha (metals) (dhanka bidix) iyo kuwa aan bir ahayn (non-metals) (dhanka midig).

b Saf kasta oo jiif ah oo ku jira Shaxda Xilliyeedka (periodic table) waxaa loo yaqaan xilli (period). ✓

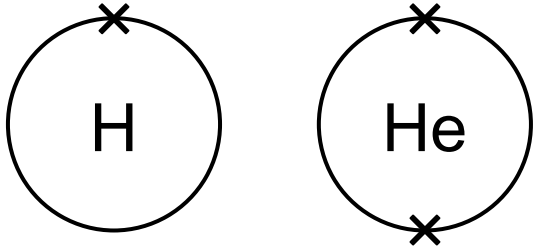
Aasaaska Shaxda Xilliyeedka (Foundations of the periodic table)

Sharaxaad

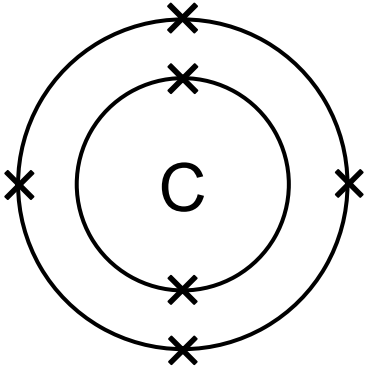
Xilli (period) waa saf jiif ah oo ku yaal Shaxda Xilliyeedka (periodic table).

Atamka (atom) dhexdiisa, elektaroonnada (electrons) waxay ku wareegaan xudunta (nucleus) qolof (shells) gudahood.

Xilli kasta (period) wuxuu u dhigmaa tirada qolof (shells) ee elektaroonnada (electrons).



Haydrojiin (Hydrogen) iyo Hiliyaam (Helium) waxay ku yaalliin xilliga koowaad (first period) ee Shaxda Xilliyeedka (periodic table).

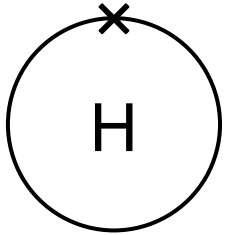


Kaarboon (Carbon) waxaa laga helaa xilliga labaad (second period) ee Shaxda Xilliyeedka (periodic table).

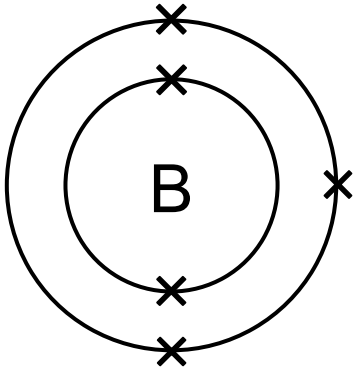
halkaas oo × u taagan elektaroonnada (electrons)

Koox (group) waa tiir taagan oo ku yaal Shaxda Xilliyeedka (periodic table).

Curiyeyaasha (Elements) isku koox (group) ah waxay leeyihiin tiro isku mid ah oo elektaroonnada (electrons) ah qolofka (shell) ugu fog xudunta (nucleus) (qolofka kore (outer shell)) atamkooda (atoms).



Haydrojiin (Hydrogen) wuxuu leeyahay 1 elektaroon (×) qolofka kore (outer shell), sidaas darteed waxaa laga helaa Kooxda 1 (Group 1).



Boron (Boron) wuxuu leeyahay 3 elektaroon (×) qolofka kore (outer shell), sidaas darteed waxaa laga helaa Kooxda 3 (Group 3).

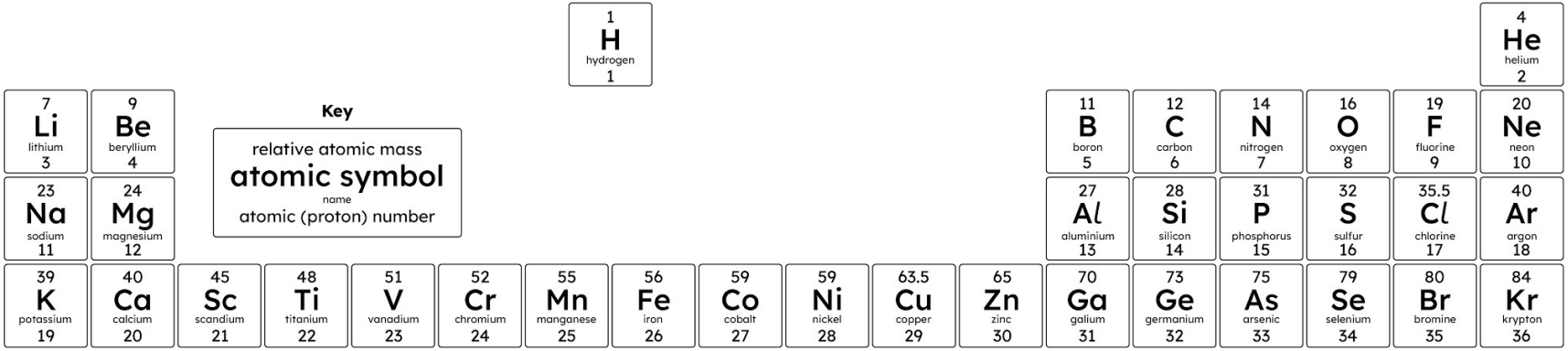
halkaas oo × u taagan elektaroonnada (electrons)

Aasaaska Shaxda Xilliyeedka (Foundations of the periodic table)

Sharaxaad

Akhriska Shaxda Xilliyeedka (periodic table) (bidix ilaa midig iyadoo laga gudbay xilliyada (periods)) wuxuu muujinayaa in curiyeyaasha (elements) loo habeeyey iyadoo la kordhinayo tirada atomiga (atomic (proton) number).

Tani waa tirada borotoonnada (protons) ee xudunta (nucleus) atamka (atom) curiye (element) gaar ah waxayna la mid tahay wadarta tirada elektaroonnada (electrons) ee dhammaan qolof (shells) atamkaas (atom).



Aasaaska shaxda xilliyeedka (periodic table)

Hubi

Kee ayaa run ah oo ka mid ah weedhahan ku saabsan curiyeyaasha (elements) isku koox ah?

a Waxay leeyihiin tiro isku mid ah oo elektaroon ah (electrons).

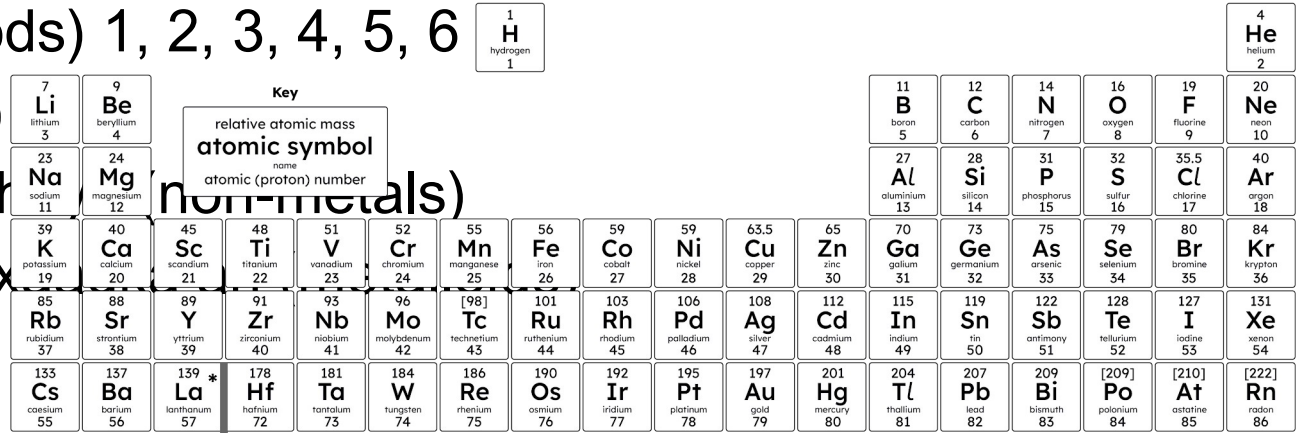
b Waxay leeyihiin tiro isku mid ah oo elektaroon (electrons) ah oo ku yaal qolofkooda sare (outermost shell).

c Waxay leeyihiin tiro isku mid ah oo qolof elektaroon (shells of electrons) ah.

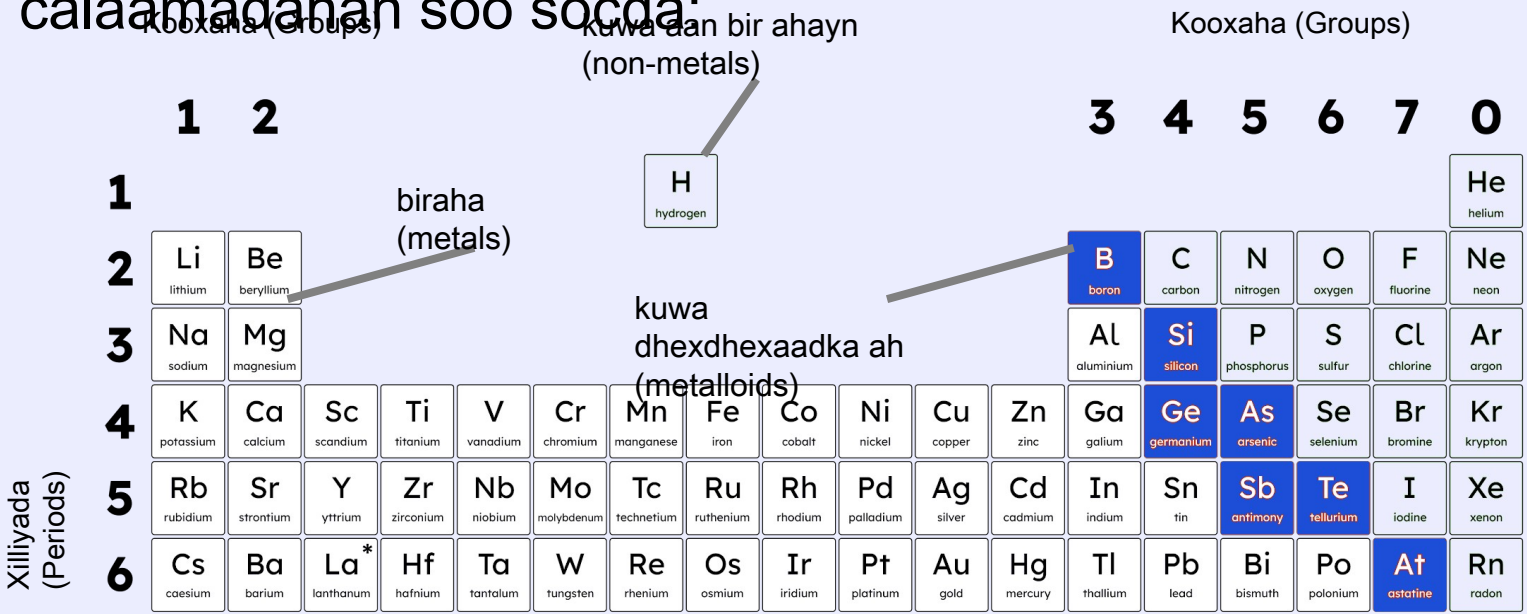
d Waxay ka samaysan yihiin atomo (atoms) (kuwaas oo ka kooban borotoon (protons), nuyutroon (neutrons) iyo elektaroon (electrons)).

1. Ku calaamadee shaxda xilliyeedka (periodic table) calaamadahan soo socda:

- Kooxaha (Groups) 1, 2, 3, 4, 5, 6, 7, 0
- Xilliyada (Periods) 1, 2, 3, 4, 5, 6
- biraha (metals)
- kuwa aan bir ah (non-metals)
- kuwa dhexdhex



1. Ku calaamadee shaxda xilliyeedka (periodic table) calaamadahan soo socda:



2. Sharax waxa loola jeedo erayada 'koox' (group) iyo 'xilli' (period) marka la eego habaynta curiyeyaasha (elements) ee shaxda xilliyeedka (periodic table).

Hubi inaad ku tilmaanto elektaroonnada (electrons) iyo qolofka elektaroonka (electron shells) jawaabtaada.

2. Sharax waxa loola jeedo erayada 'koox' (group) iyo 'xilli' (period) marka la eego habaynta curiyeyaasha (elements) shaxda xilliyeedka (periodic table).

Hubi inaad ku tilmaanto elektaroonnada (electrons) iyo qolofka elektaroonka (electron shells) jawaabtaada.

Xilli (period) waa saf toosan oo ku yaal shaxda xilliyeedka (periodic table). Xilli kastaa wuxuu u dhigmaa tirada qolofka elektaroonka (electron shells) ee atamka curiye (element) ah.

Koox (group) waa tiir toosan oo ku yaal shaxda xilliyeedka (periodic table). Curiyeyaasha (elements) isku kooxda ah waxay leeyihiin tirada elektaroonnada (electrons) isku mid ah ee qolofka ugu fog xudunta (nucleus) atamkooda (qolofka sare).

Qaabka casharka

Kooxaha (groups) curiyeyaasha (elements) ee shaxda xilliyeedka (periodic table)

- Aasaaska shaxda xilliyeedka (periodic table)
- Sahminta kooxaha (groups) iyo sifooyinka

Sahminta kooxaha (groups) iyo sifooyinka

Sharaxaad

Sifooyinka curiye (element) waxay ku xiran yihiin booska uu ku yaal shaxda xilliyeedka (periodic table).

Fahamka xiriirradan ayaa kaa caawinaya saadaalinta hab-dhaqanka curiyeyaasha (elements) iyo falgalyada (reactions).

Sifooyinka jireed waxaa ka mid ah:

- heerkulka dhalaalida iyo karkarinta
- cufnaanta (density)
- korantada (conductivity)
- midabka

Sifooyinka kiimikada waxaa ka mid ah:

- fal-celinta (reactivity)
- aashitada / alkalinta
- gubashada (combustibility)
- iska caabbinta miridhku (corrosion resistance)

Hubi

Kee ka mid ah kuwan soo socda waa tusaalooyin sifooyin jireed (physical properties)?

a barta dhalaalida iyo karkarinta (melting and boiling points) ✓

b tusmada korantada (conductivi ✓

c falgal (reactivity)

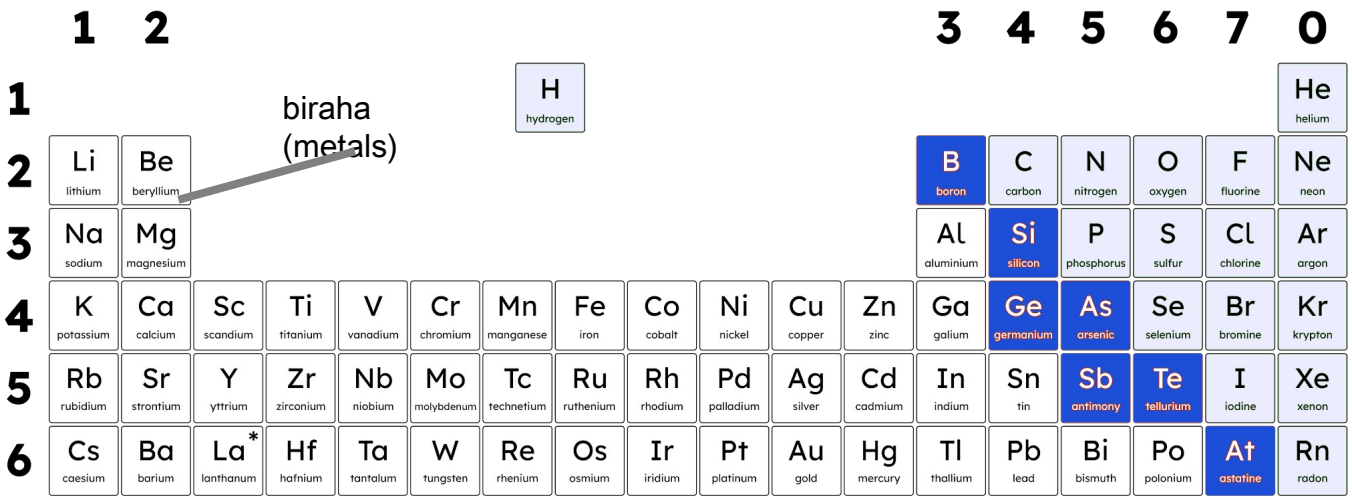
d cufnaan (density) ✓

Sahminta kooxaha iyo sifooyinka

Sharaxaad

Biraha (metals), aan-birahayn (non-metals), iyo metalloids waa saddexda nooc ee ugu muhiimsan ee curiyeyaasha (elements).

Biraha (metals) caadi ahaan waa dhalaalaya, jilicsan, iyo kuwo wanaagsan oo koronto iyo kulayl gudbiya.



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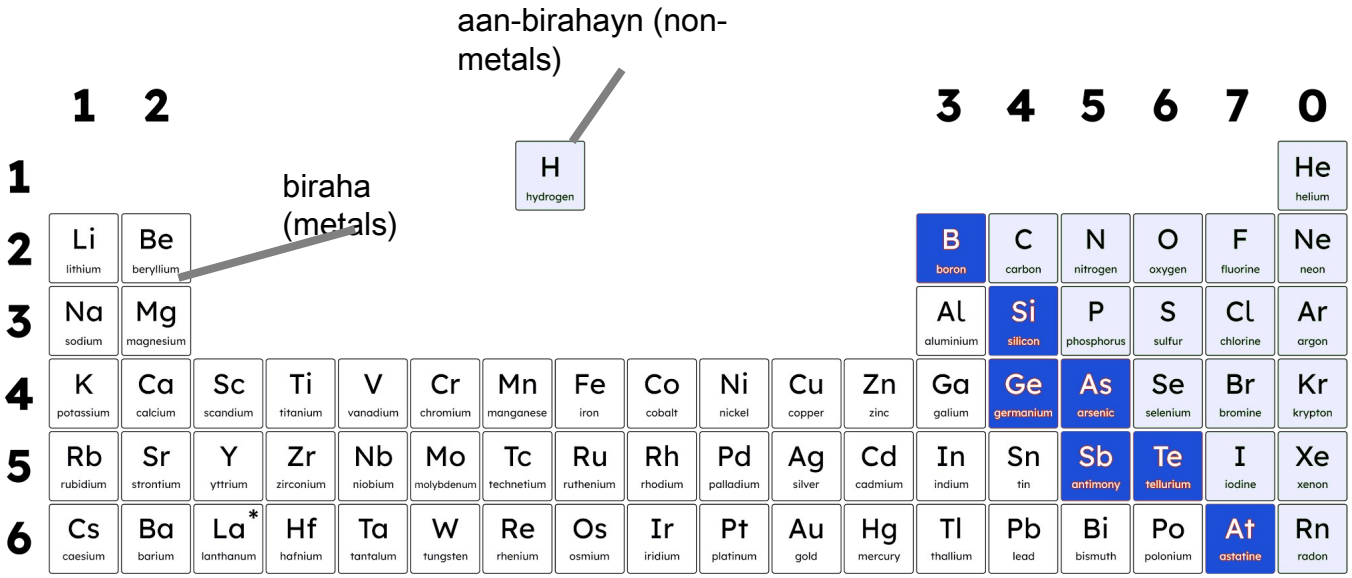
Sahminta kooxaha iyo sifooyinka

Sharaxaad

Biraha (metals), aan-birahayn (non-metals), iyo metalloids waa saddexda nooc ee ugu muhiimsan ee curiyeyaasha (elements).

Aan-birahayn (non-metals) inta badan waa caajis, jajaban, iyo kuwo aan wanaagsanayn oo gudbiya.



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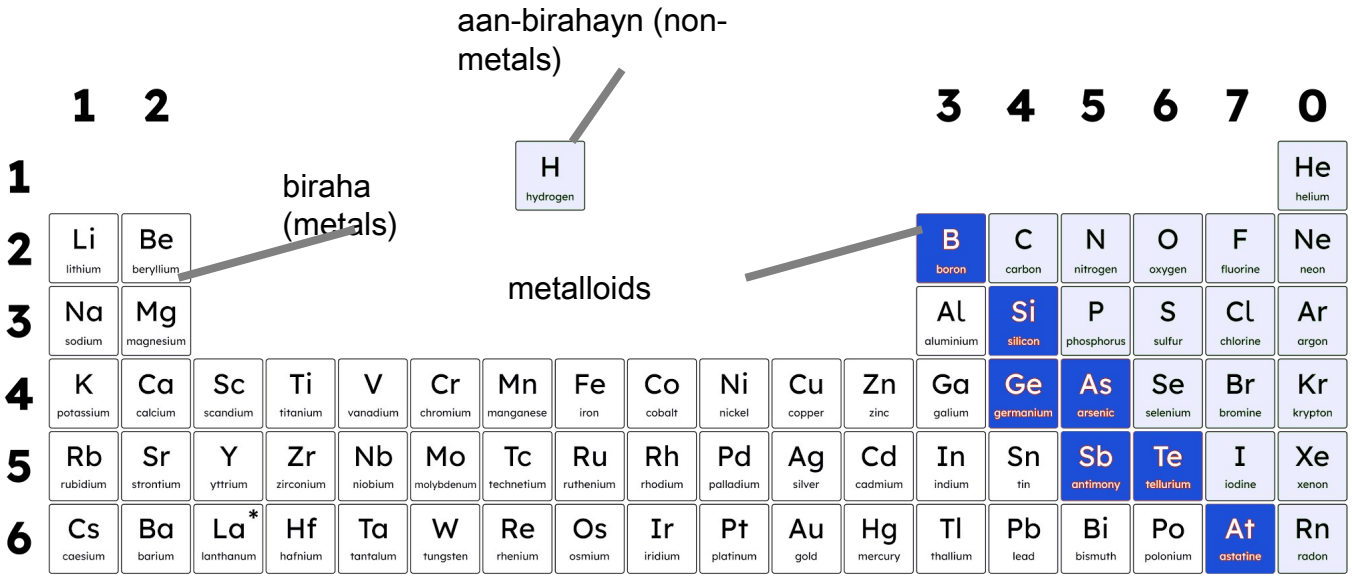
Sahminta kooxaha iyo sifooyinka

Sharaxaad

Metalloids waxay leeyihiin sifooyin dhexdhexaad ah oo u dhexeeya biraha (metals) iyo aan-birahayn (non-metals).

Waxaa badanaa loo isticmaalaa semiconductors, waxaana caadi ahaan loo isticmaalaa qalabka elektarooniga ah.



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Exploring groups and properties

Hubi

Kuwaas ka mid ah waa tusaalooyinka sifooyinka jirka ee birta aan ahayn?

a low melting and boiling points ✓

b good conductors of electricity

c shiny

d brittle ✓

cashar.so

Exploring groups and properties

Sharaxaad

Elements in the same **group** have the same number of electrons on their outer shell. This causes the elements in the same group to have similar chemical properties, showing a trend throughout the group.

Key

relative atomic mass
atomic symbol
name
atomic (proton) number

							1 H hydrogen 1										4 He helium 2
7 Li lithium 3	9 Be beryllium 4											11 B boron 5	12 C carbon 6	14 N nitrogen 7	16 O oxygen 8	19 F fluorine 9	20 Ne neon 10
23 Na sodium 11	24 Mg magnesium 12											27 Al aluminium 13	28 Si silicon 14	31 P phosphorus 15	32 S sulfur 16	35.5 Cl chlorine 17	40 Ar argon 18
39 K potassium 19	40 Ca calcium 20	45 Sc scandium 21	48 Ti titanium 22	51 V vanadium 23	52 Cr chromium 24	55 Mn manganese 25	56 Fe iron 26	59 Co cobalt 27	59 Ni nickel 28	63.5 Cu copper 29	65 Zn zinc 30	70 Ga galium 31	73 Ge germanium 32	75 As arsenic 33	79 Se selenium 34	80 Br bromine 35	84 Kr krypton 36
85 Rb rubidium 37	88 Sr strontium 38	89 Y yttrium 39	91 Zr zirconium 40	93 Nb niobium 41	96 Mo molybdenum 42	[98] Tc technetium 43	101 Ru ruthenium 44	103 Rh rhodium 45	106 Pd palladium 46	108 Ag silver 47	112 Cd cadmium 48	115 In indium 49	119 Sn tin 50	122 Sb antimony 51	128 Te tellurium 52	127 I iodine 53	131 Xe xenon 54
133 Cs caesium 55	137 Ba barium 56	139 La * lanthanum 57	178 Hf hafnium 72	181 Ta tantalum 73	184 W tungsten 74	186 Re rhenium 75	190 Os osmium 76	192 Ir iridium 77	195 Pt platinum 78	197 Au gold 79	201 Hg mercury 80	204 Tl thallium 81	207 Pb lead 82	209 Bi bismuth 83	[209] Po polonium 84	[210] At astatine 85	[222] Rn radon 86
[223] Fr francium 87	[226] Ra radium 88	[227] * Ac actinium 89	[261] Rf rutherfordium 104	[262] Db dubnium 105	[266] Sg seaborgium 106	[264] Bh bohrium 107	[277] Hs hassium 108	[268] Mt meitnerium 109	[271] Ds darmstadtium 110	[272] Rg roentgenium 111	[285] Cn copernicium 112	[286] Nh nihonium 113	[289] Fl flevorium 114	[289] Mc moscovium 115	[293] Lv livermorium 116	[294] Ts tennessine 117	[294] Og oganesson 118

*Elements with atomic numbers 58-71 and 90-103 have been omitted from this periodic table.

Exploring groups and properties

Hubi

Run mise been?

Elements in the same group have similar chemical properties, as they have the same number of shells of electrons.

T Run

F Been ✓

Sabab u sheeg jawaabtaada

a Elements in the same group have the same number of electrons on their outermost shell. ✓

b Elements in the same period have similar chemical properties, not elements in the same group.

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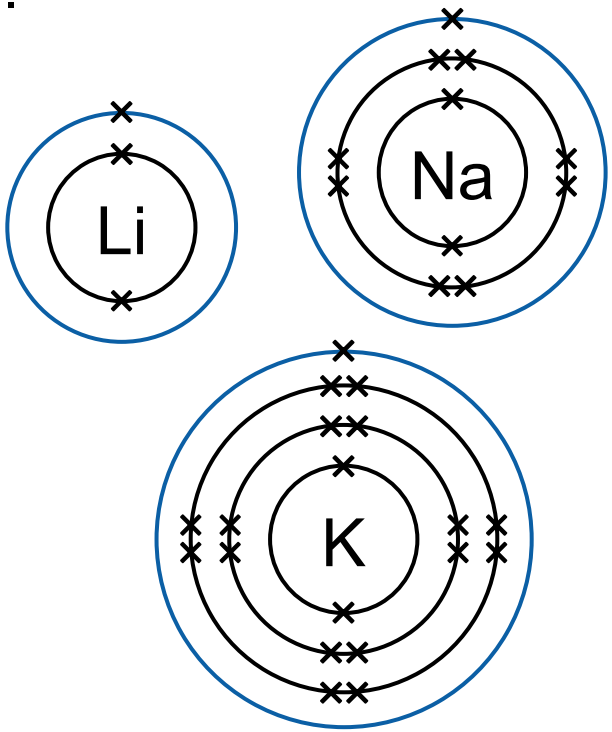
Exploring groups and properties

Sharaxaad

Kooxda 1 waxaa sidoo kale loo yaqaan biraha alkali. Kooxdan waxaa ka mid ah lithium, sodium, iyo potassium.

Waxay leeyihiin sifooyin kiimiko iyo jir oo isku mid ah:

- high reactivity
- react vigorously with cold water
- low melting points

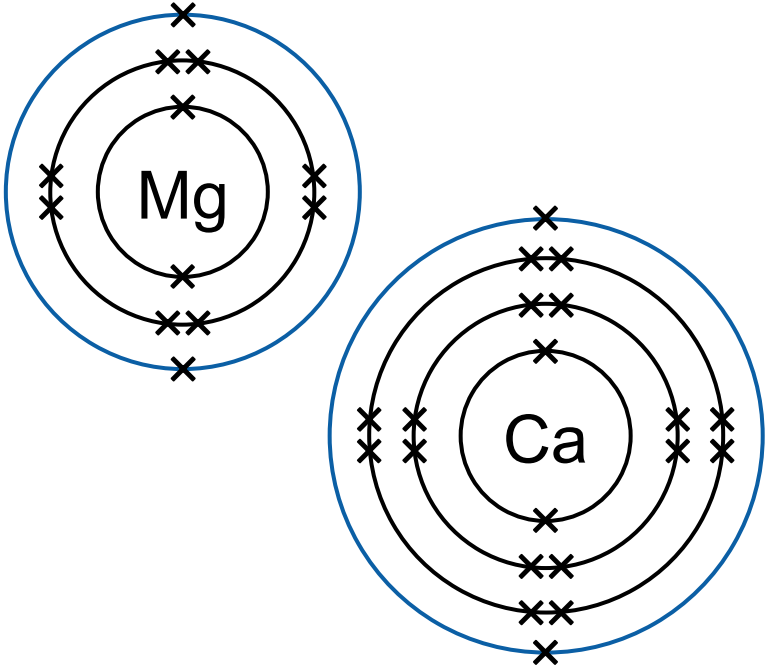


Sharaxaad

Kooxda 2 waxaa sidoo kale loo yaqaan biraha alkaline earth. Kooxdan waxaa ka mid ah magnesium iyo calcium.

Kooxda 2 way ka duwan tahay Kooxda 1, sababtoo ah curiyeyaashu (elements) waa:

- ka yar falgal (reaction) marka loo eego Kooxda 1
- caadi ahaan waxay leeyihiin heerkul dhalaal (melting points) iyo cufnaan (densities) sare marka loo eego Kooxda 1



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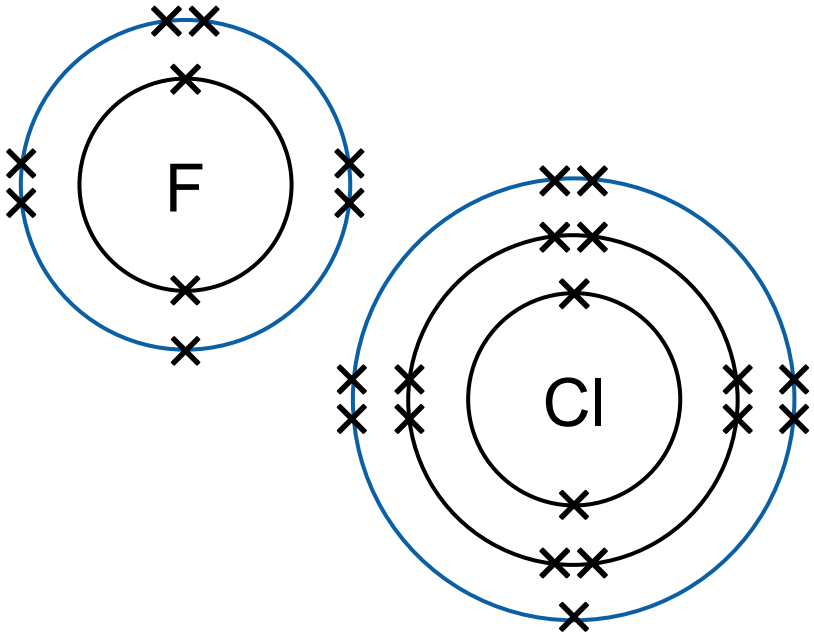
Sharaxaad

Kooxda 7 waxaa sidoo kale loo yaqaan Halogens. Kooxdan waxaa ka mid ah fluorine, chlorine, bromine iyo iodine.

Kooxda 7 waxaa lagu yaqaan:

- ujeeddo ay ku sameeyaan cusbo (salts) birta (metals)
- waxay u jiraan sida molecules diatomic
- inay yihiin sun (toxic)



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Sahaminta kooxaha iyo sifooyinka

Sharaxaad

Qaybta dhexe ee curiyeyaasha (elements) waxaa loo yaqaan transition metals waxaana ka mid ah curiyeyaasha sida iron iyo copper. Waxay leeyihiin sifooyin caadi ah oo birta (metals), sida inay yihiin kuwo wanaagsan oo gudbiya (conductors) iyo inay yihiin kuwo la qaabayn karo (malleable).

Key

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Sahaminta kooxaha iyo sifooyinka

Hubi

Kee ka mid ah sifooyinka soo socda ma aha sifo jireed (physical property) caadi ah oo transition metals?

a heerkul dhalaal (melting points) sare

b dull (aan iftiimin) ✓

c malleability (la qaabayn karo)

d gudbinta wanaagsan ee kulaylka iyo korontada

Hubi

Kuwee ka mid ah weedhahan soo socda waa run?

a Curiyeyaasha (elements) isku koox ku jira jaantuska xilliyeedka waxay leeyihiin sifooyin kiimiko (chemical properties) isku mid ah. ✓

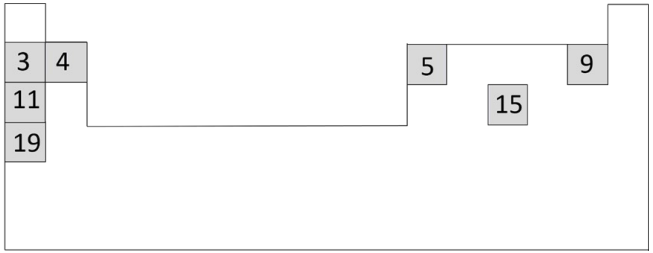
b Jaantuska xilliyeedka (periodic table) waxaa ku jira oo keliya bir (metals) iyo aan-bir (non-metals).

c Shaxda (Periodic Table) waxaa loo habeeyey safaf loo yaqaan kooxo (groups).

d Dimitri Mendeleev wuxuu muhiim ka ahaa horumarinta shaxda (Periodic Table). ✓

1. Toddoba curiye (element) ayaa lagu muujiyey shaxda (Periodic Table) ee qaabaysan ee midigta.

Buuxi meelaha bannaan si aad u dhamaystirto qoraalka hoose. Waa inaad kaliya isticmaashaa ereyada period iyo group.



Curiyeyaasha (Elements) 3 iyo 4 ma laha sifooyin kiimiko oo isku mid ah sababtoo ah waxay ku jiraan isla period-ka, ma aha isla group-ka.

Tirooyinka atomiga (atomic numbers) 3, 9 iyo 15 waxay kordhaan 6 mar kasta. Curiyeyaashu (elements) ma laha sifooyin kiimiko oo isku mid ah. Shaxda (Periodic Table) kuma ridayso isla group-ka.

Tirooyinka atomiga (atomic numbers) 3, 11 iyo 19 waxay kordhaan 8 mar kasta. Curiye (element) kastaa wuxuu ku jiraa period-ka kala duwan. Curiyeyaashani (elements) waxay leeyihiin sifooyin kiimiko oo isku mid ah. Shaxda (Periodic Table) waxay ku riddaa isla group-ka.

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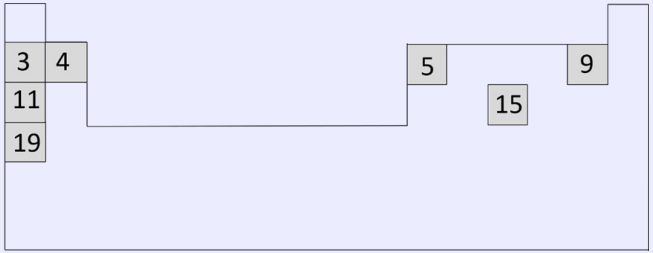

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Tirooyinka atomiga (atomic numbers) 3, 11 iyo 19 waxay kordhaan 8 mar kasta. Curiye (element) kastaa wuxuu ku jiraa period-ka kala duwan. Curiyeyaashani (elements) waxay leeyihiin sifooyin kiimiko oo isku mid ah. Shaxda (Periodic Table) waxay ku riddaa isla group-ka.

2. Fiiri macluumaadka ku saabsan laba qaybood oo curiyeyaasha (elements) ah.

Qaybta 1	Curiye (Element) X	Curiye (Element) Y	Curiye (Element) Z
Sifada	gaas huruud / cagaar ah	dareere bunni ah	adag cawlan / madow
Falgal (reaction) birta (iron)	si degdeg ah ayuu ula falgalaa (reacts) suuf bir ah oo la kululeeyay	si dhakhso leh ayuu ula falgalaa (reacts) suuf bir ah oo la kululeeyay, haddii la diirriyo	si gaabis ah ayuu ula falgalaa (reacts) suuf bir ah haddii si xoog leh loo kululeeyo

Qaybta 2	Curiye (Element) J	Curiye (Element) K	Curiye (Element) L
Sifada	gaas aan midab lahayn	gaas aan midab lahayn	gaas aan midab lahayn
Falgal (reaction) birta (iron)	wuxuu ula falgalaa (reacts) suuf bir ah marka la kululeeyo	kuma falgalo (reacts) suuf bir ah, xataa marka la kululeeyo	kuma falgalo (reacts) suuf bir ah, xataa marka la kululeeyo

Kee ka mid ah qaybaha curiyeyaasha (elements) wuxuu muujinayaa isku ekaansho sifooyin kiimiko? Sababta?

2. Eeg macluumaadka ku saabsan laba qaybood oo curiyeyaasha (elements) ah.

Kooxdee curiyeyaasha (elements) ayaa muujinaya isku ekaanshaha sifooyinka kiimikada (chemical properties)? Sababta?

Jawaabtaadu waxay u ekaan kartaa:

Kooxda 1 waxay muujinaysaa curiyeyaasha (elements) leh sifooyin kiimikada (chemical properties) oo isku mid ah, sababtoo ah dhammaantood waxay si isku mid ah u falgalaan (react) birta (iron). Halka, Kooxda 2 ay ku jirto kaliya 1 curiye (element) oo la falgala (reacts) birta (iron) iyo 2 curiye (elements) oo aan la falgalin (don’t react).

Soo koobid

Kooxaha curiyeyaasha (elements) ee shaxda xilliyeed (periodic table)

Tiir kasta oo ka mid ah shaxda xilliyeed (periodic table) waxaa loo yaqaan koox (group), saf kastana waxaa loo yaqaan xilli (period).

Shaxda xilliyeed (periodic table) waxaa sameeyay saynisyahan Ruush ah oo la yiraahdo Dimitri Mendeleev.

Shaxda xilliyeed (periodic table) waxaa ku jira dhammaan curiyeyaasha (elements) oo loo habeeyay kooxo (groups) iyo xilliyo (periods), iyadoo loo eegayo sifooyinkooda (properties).

Curiyeyaasha (elements) ku jira isku koox (group) ee shaxda xilliyeed (periodic table) waxay leeyihiin sifooyin (properties) isku mid ah.

Marka lagu daro kooxaha (groups), curiyeyaasha (elements) waxaa loo qaybin karaa kuwa aan bir ahayn (non-metals) iyo biraha (metals), oo ay ku jiraan biraha kala-guurka (transition metals).

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