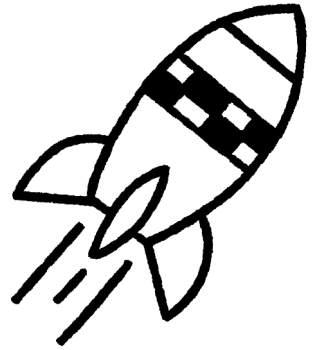


Koronto (Electric current)

Sayniska

Cutub: Wareegyo taxane (Series circuits)



Natiijo

Waxaan qeexi karaa sida unuggu u keeno koronto (current) wareegga, iyo sharaxaadda dhaqdhaqaaqa (movement) elektaroonnada.

Erayada muhiimka ah

**unug koronto (electrical
cell)**

sharax (charge)

elektaroonno (electrons)

koronto (electric current)

Erayada muhiimka ah

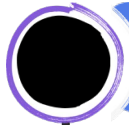
Unug koronto (electrical cell) waa qayb ka shaqeysa falgal (reaction) kiimiko si ay u socodsiiyo sharax (charge) koronto wareegga.

Walxuhu waxay yeelan karaan sharax (charge) koronto oo togan ama taban. Haddii sharax (charge) uusan jirin, waa dhexdhexaad.

Elektaroonnadu (electrons) waa sharaxaadda (charge) ku jirta gudbiyeyaasha kuwaas oo socda si ay u keenaan koronto (electric current).

Koronto (electric current) waa socodka sharaxaadda (charge) koronto ee wareegga.

Koronto (Electric current)



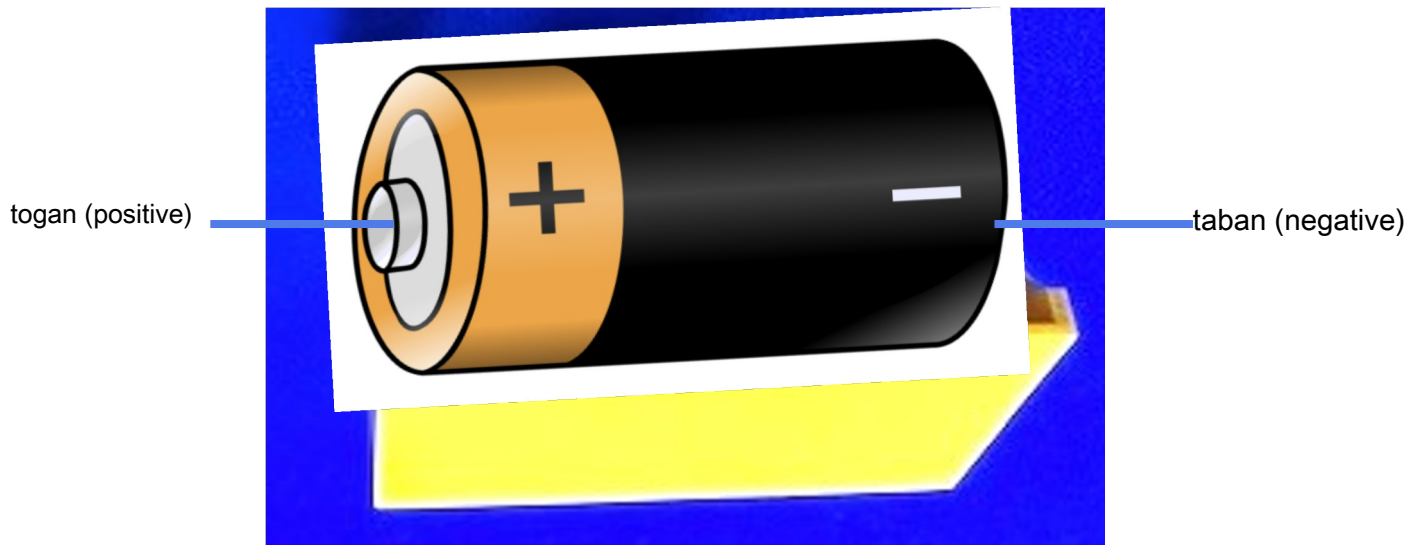
Waa maxay unug koronto (electrical cell)?



Waa maxay koronto (current)?

Waa maxay unug koronto (electrical cell)?

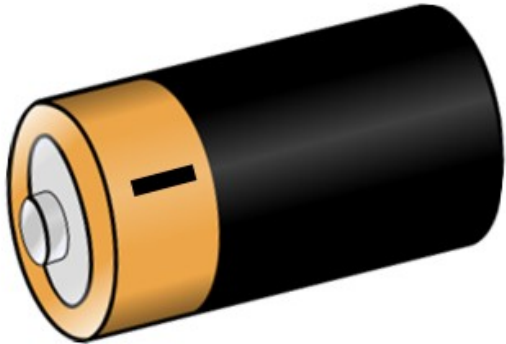
Unug koronto (electrical cell) wuxuu leeyahay dhammaad 'plus' ama togan.



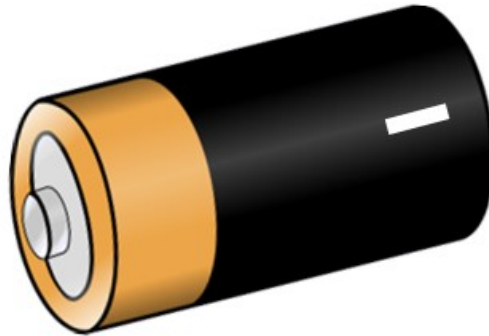
Dhammaadka kale waa taban. Dhammaadka unugga waxaa loo yaqaan terminal-yada.

Waa maxay unug koronto (electrical cell)?

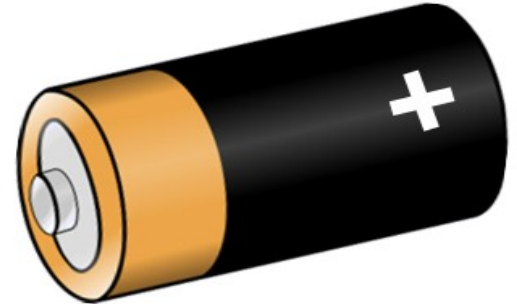
Kee unug ayaa leh terminal ku calaamadsan astaanta saxda ah?



a

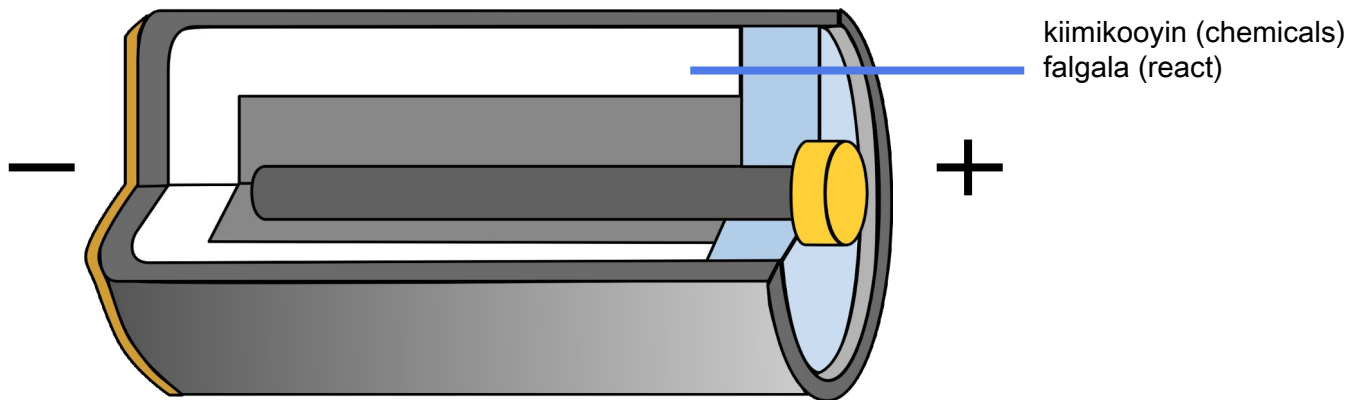


b



c

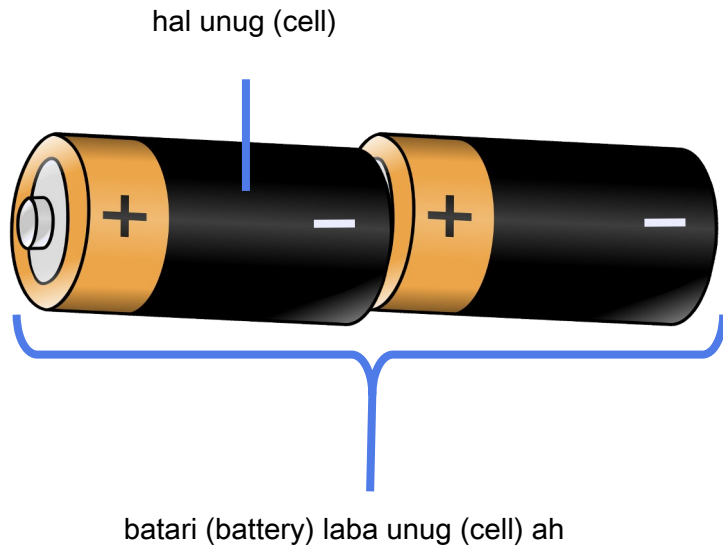
Falgal (reaction) kiimiko oo unugga (cell) dhexdiisa ah ayaa ka dhigaya terminalyasha kuwa togan (positive) iyo kuwa taban (negative).



Terminalyashani waxay riixaan shixnado (charges) wareegga (circuit) dhexdiisa.

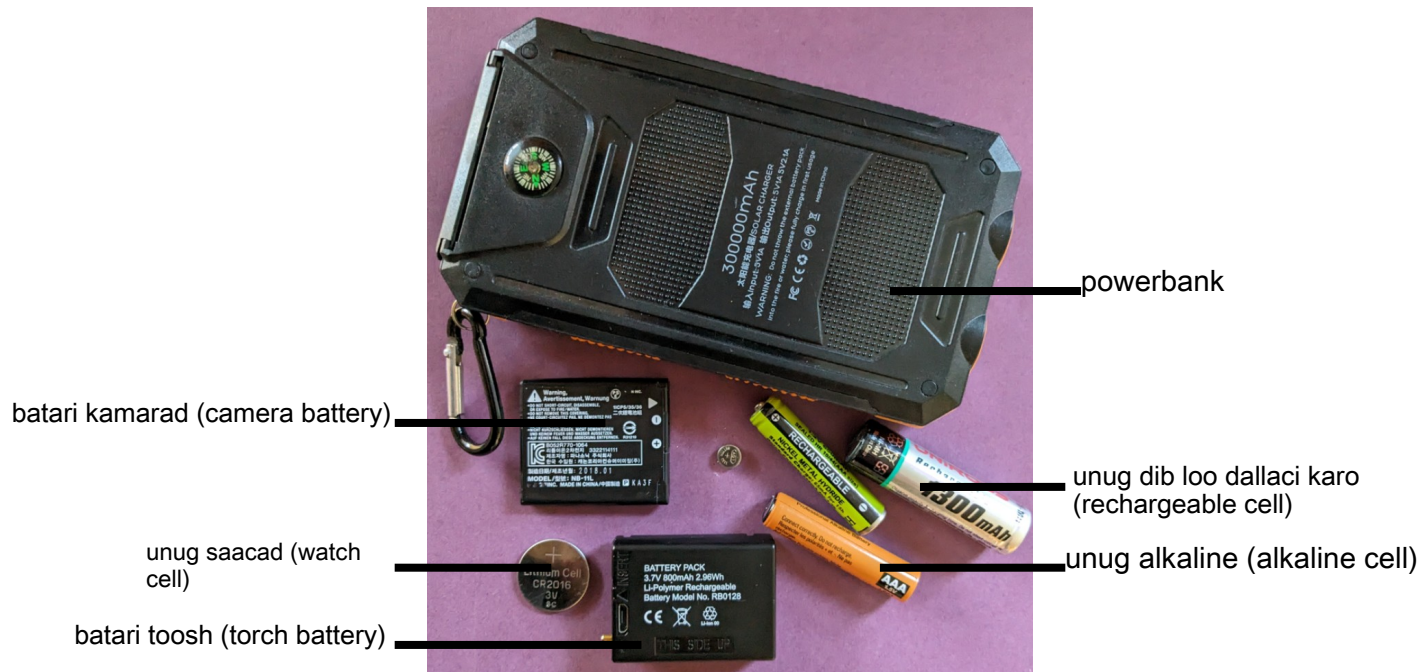
Waa maxay unug koronto (electrical cell)?

In ka badan hal unug (cell) oo la isku xiro ayaa sameeya batari (battery) unugyo ah, oo inta badan loo yaqaan batari (battery).



Waa maxay unug koronto (electrical cell)?

Waxaa jira unugyo (cells) iyo batariyo (batteries) oo kala duwan oo loo isticmaalo ujeedooyin kala duwan.



Waa maxay unug koronto (electrical cell)?

Taleefanka gacanta (mobile phone) wuxuu ku jiraa batari (battery) weyn oo dib loo dallaci karo.

Taleefanku ma shaqeyn karo haddii batarigu (battery) uusan riixin socodka (current) wareegyada (circuits) dhexdooda.

batari taleefan (phone battery)



Waa maxay unug koronto (electrical cell)?

Baabuurta korontada ku shaqeeya (electric cars) waxay leeyihiin batariyo (batteries) waaweyn oo ay tahay in si joogto ah dib loo dallaco.



Waa maxay unug koronto (electrical cell)?

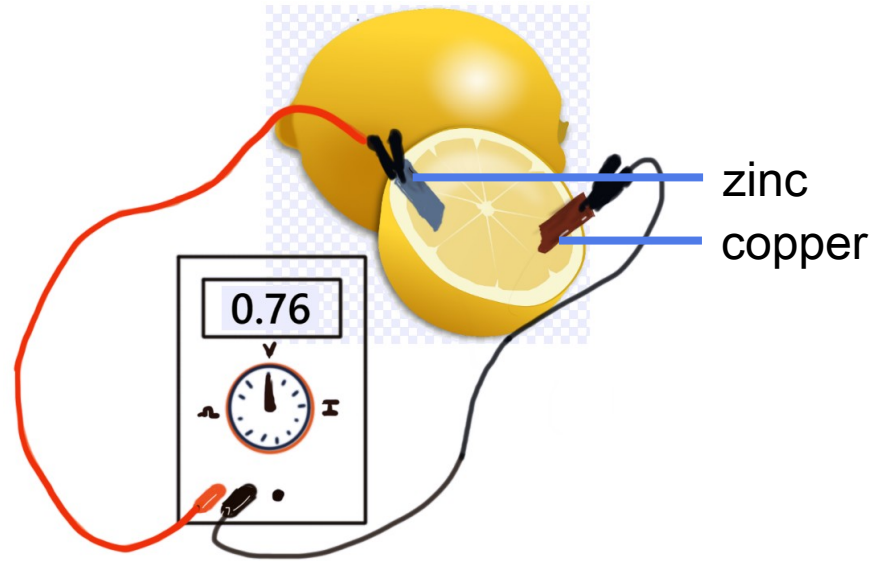
Kee ayaa ka mid ah weedho ku saabsan unugyada iyo baytariyada uu yahay mid sax ah?

- a** Dhammaantood waa la dib u buuxin karaa (rechargeable).
- b** Waxay ku iman karaan qaabab iyo cabbirro kala duwan. ✓
- c** Waxay isticmaalaan shidaal (fossil fuels) si ay u soo saaraan koronto.
- d** Waxay leeyihiin terminal togan, taban, iyo dhexdhexaad.

Waa maxay unug koronto (electrical cell)?

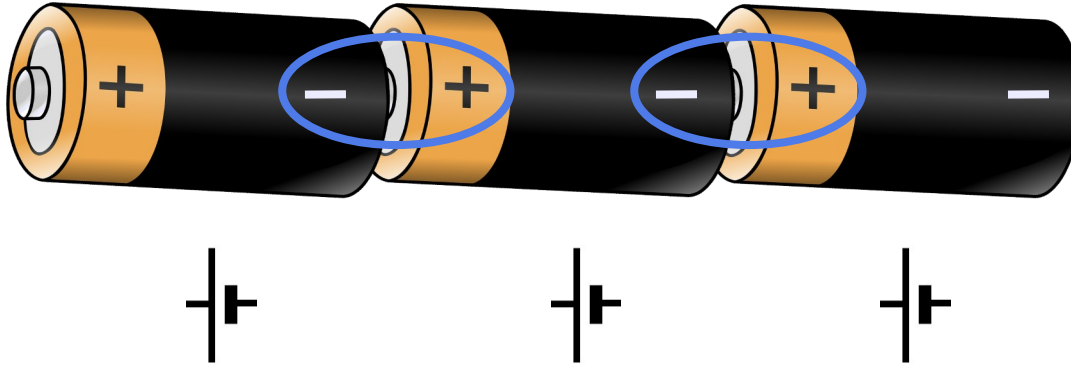
Unug fudud ayaa la samayn karaa iyadoo la isticmaalo labo bir oo kala duwan, sida zinc iyo copper, oo la geliyo liin.

Cusbada (acidic) ee ku jirta liinta waxay la falgashaa (reacts) biraha, taasoo keenta in koronto (charge) ku qulqulo wareegga (circuit).



Waa maxay unug koronto (electrical cell)?

Unugyada waa in la isku xiraa si ay isku jiho ugu toosan yihiin.

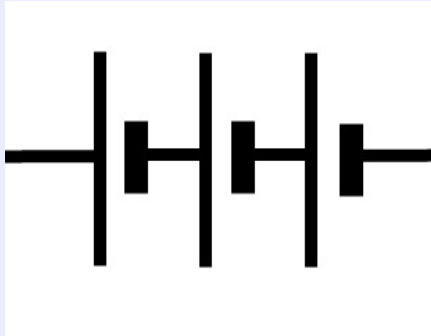


Terminalyada togan waa inay ku xirmaan kuwa taban.

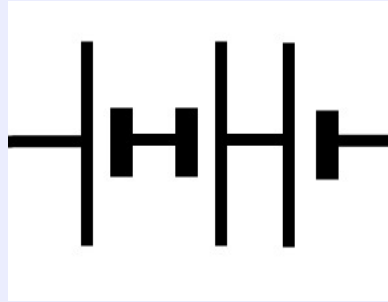
Dhammaan unugyadu waa inay nooc isku mid ah yihiin.

Waa maxay unug koronto (electrical cell)?

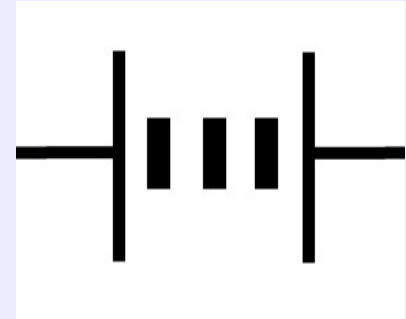
Kee ayaa ka mid ah kuwan soo socda uu yahay astaanta (symbol) saddex unug oo si sax ah isugu xiran?



a



b



c

Arday qaar ayaa isku dayaya inay si fiican u shidaan laambad (lamp). Waxay haystaan unugyo iyo baytariyo kala duwan.

Sharax sida ay u samayn karaan si ammaan ah.



Ardayda qaar waxay isku dayayaan inay laambad (lamp) u shidaan sida ugu iftiin badan. Waxay leeyihiin noocyo kala duwan oo unugyo (cells) iyo baytariyo (batteries) ah.

Sharax sida ay si badbaado leh u sameyn karaan.

- 1) Kala saar unugyada iyo baytariyada nooc kasta.
- 2) Dooro nooca unugyada ugu badan leh, ku xidh dhamaad ilaa dhamaad, isagoo u jeedda isla jihada.
- 3) Ku xidh laambadda (lamp).
- 4) Ku celi tillaabooyinkan nooc kasta oo unug (cell) ama baytari (battery) ah, si aad u aragto qaybteeda laambadda (lamp) ugu iftiiminaysa.

Curiyaan koronto (Electric current)



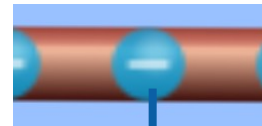
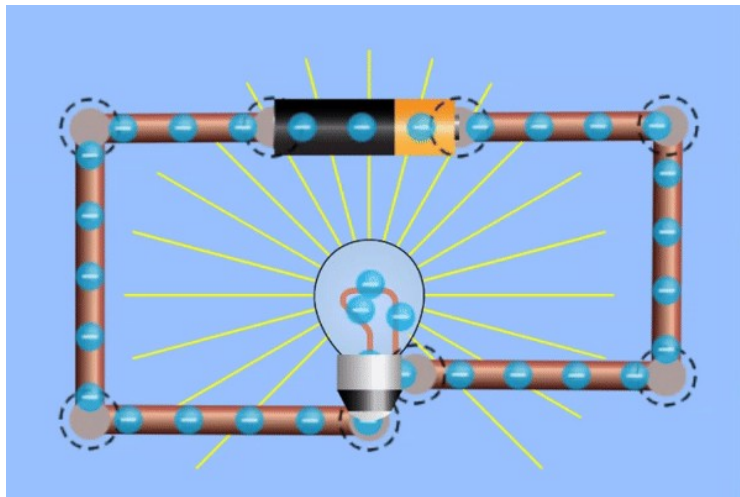
Waa maxay unug koronto (electrical cell)?



Waa maxay curyaan (current)?

Waa maxay curyaan (current)?

Unuggu wuxuu soo saaraa culeys diidmo (negative charges) oo ka soo baxa xidhmada diidmada (negative terminal) wuxuuna soo jiitaa xagga xidhmada togan (positive terminal).



culeys diidmo (negative charge) oo silig (wire) ku jira

Culeysyadan waxaa loo yaqaan elektaroonno (electrons).

Waa maxay curyaan (current)?

Midka kuwa soo socda ee ku saabsan unugga (cell) waa mid sax ah?

a

Culeys togan (positive charge) waxaa la soo jiitaa xidhmada diidmada (negative terminal).

b

Culeys diidmo (negative charge) waxaa la soo jiitaa xidhmada diidmada (negative terminal).

c

Culeys diidmo (negative charge) waxaa laga soo saaraa xidhmada diidmada (negative terminal).

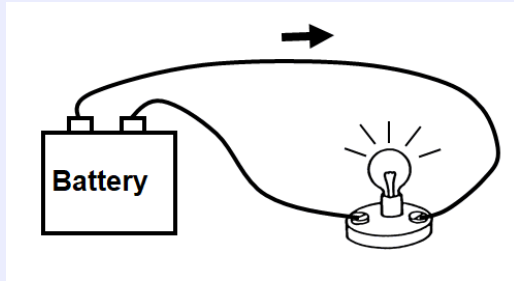
d

Culeys togan (positive charge) waxaa laga soo saaraa xidhmada diidmada (negative terminal).

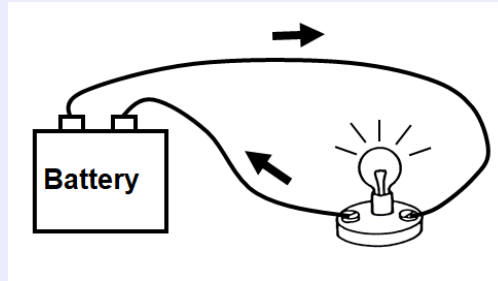


Waa maxay curyaan (current)?

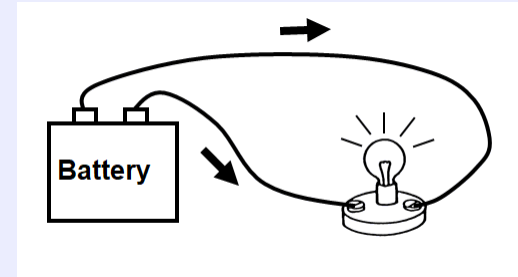
Jajabka (diagram) kee ayaa ugu saxda ah jihada curyaanka (current) ee wareeggan (circuit) marka laambaddu (lamp) shidan tahay?



a

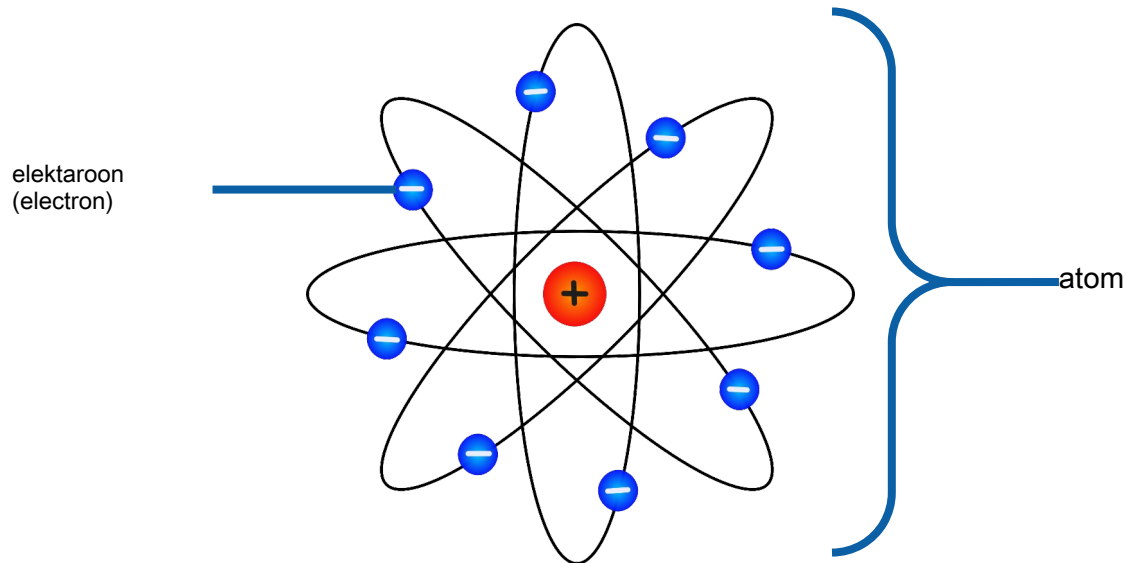


b



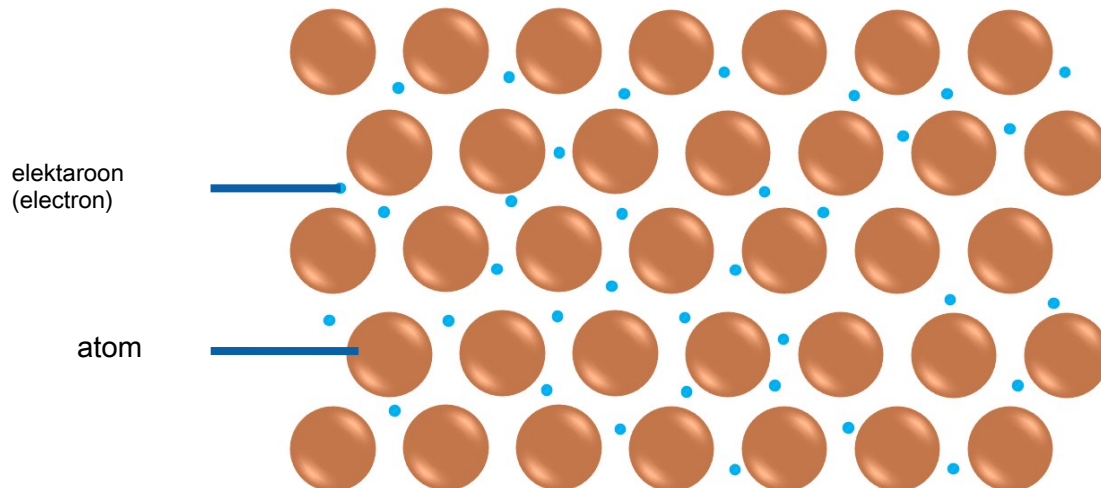
c

Elektaroonnada (Electrons) aad ayey u yar yihiin, xataa mikroskoobyada (microscopes) indhaha ugu fiicanna laguma arki karo.



Elektaroonnada jaantuskan waxaa matalaya goobo buluug ah.

Tani waa qaab kale oo lagu muujinayo elektaroonada birta.



Elektaroonadu waxay si fudud u dhex mari karaan atamka birta, taasoo ka dhigaysa birta kuwo wanaagsan oo koronto qaada (conductors).

Laba ka mid ah weedhahan soo socda ee ku saabsan elektaroonada waa kuwa sax ah?

a

waxay yihiin shixnado taban (negative charges)



b

waxay yihiin buluug

c

waxay yihiin kuwo aad u yar

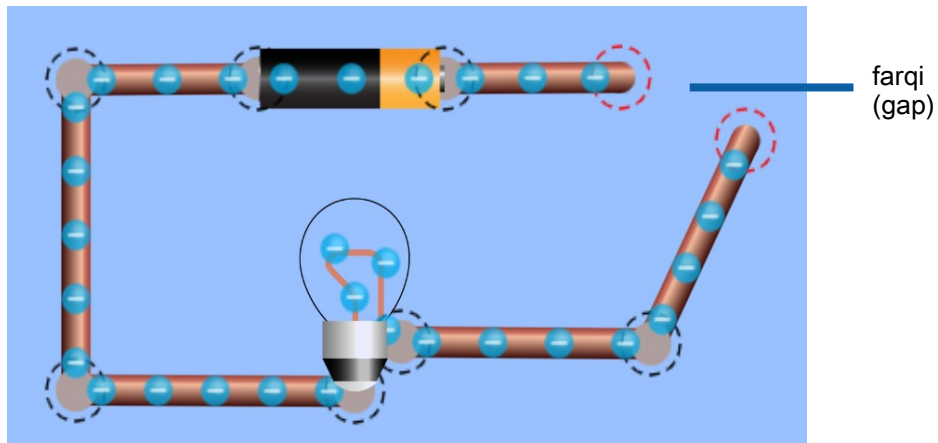


d

waxaa laga helaa oo kaliya fiilooyinka

Waa maxay current?

Haddii wareeggu (circuit) 'jabo', elektaroonadu ma dhex mari karaan farqiga.



Inkastoo aysan dhaqaaqin, elektaroonadu wali waxay ku jiraan cell-ka, fiilooyinka, iyo nalka (bulb).

Xaggee, wareeg jaban, ayay jiraan elektaroono aan la heli karin inay qulqulaan?

a

fiilooyinka (the wires)

b

nalka filament-ka (the filament bulb)

c

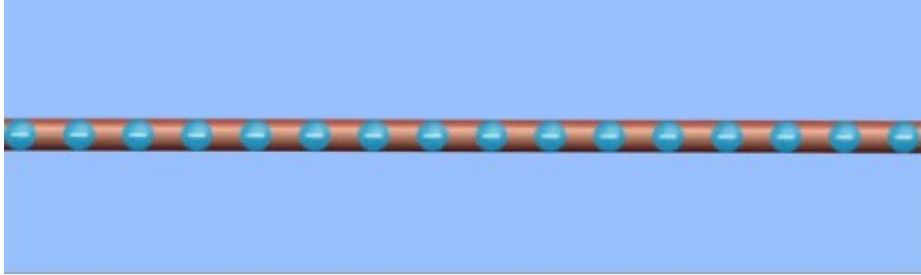
unugga (the cell)

d

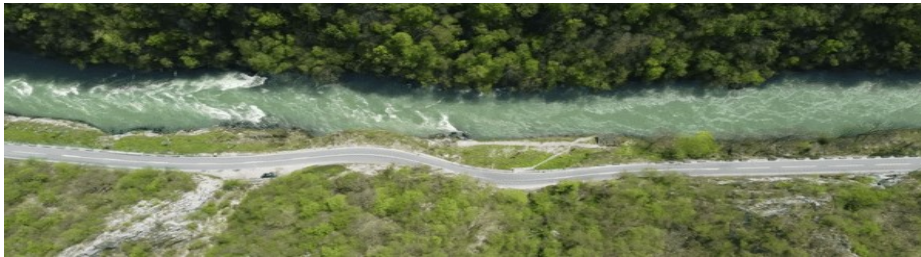
farqiga (the gap) ✓

Waa maxay current (current)?

Qulqulka charges-ka (electrons) waxaa loo yaqaan current (electric current).



Tani waxay la mid tahay qulqulka biyaha (water) ee webiga.



Waa maxay current (current)?

Macallin wuxuu isticmaalaa qaabka webiga si uu u sharaxo sida current (current) u qulqulo.
Maxay qaabku u isticmaalaa inuu matalo charge (charge)?

a

biyaha (water) webiga ku jira ✓

b

xawaaraha webiga

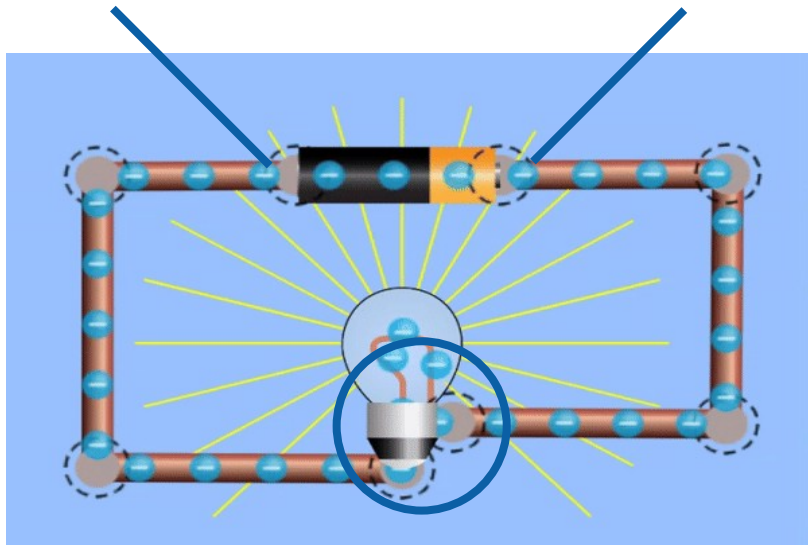
c

hirarka korka biyaha (water)

Waa maxay current (current)?

Marka electrons-ku ka baxaan unugga (the cell)...

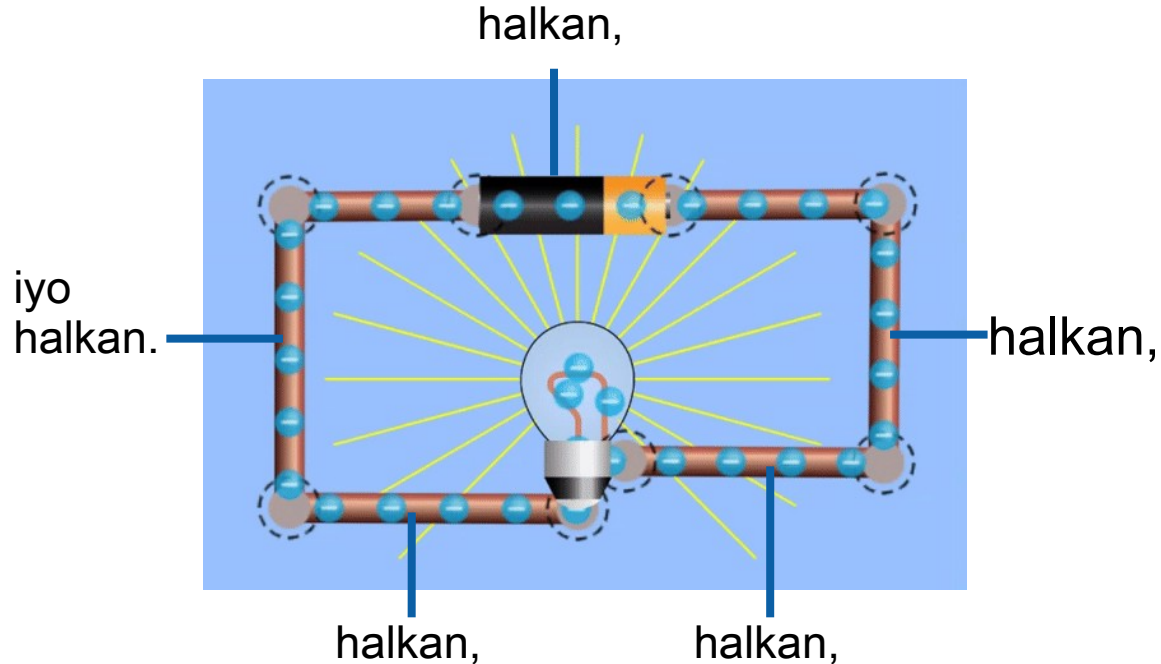
...tiro isku mid ah ayaa soo gala.



Electron kasta oo nalka soo gala, mid kale ayaa ka baxa.

Waa maxay current (current)?

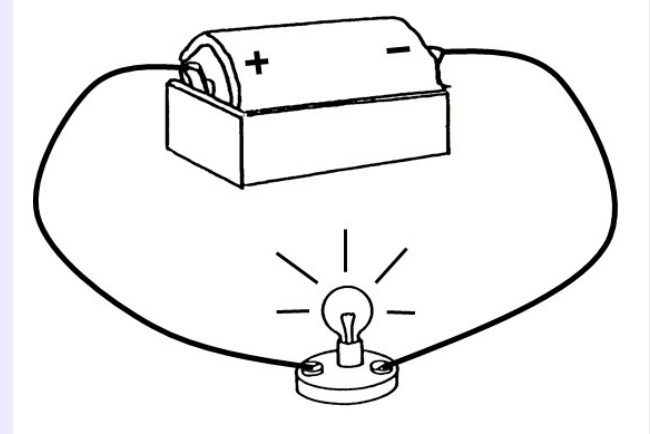
Current-ka (current) wareeggan waa isku mid...



Waa maxay current?

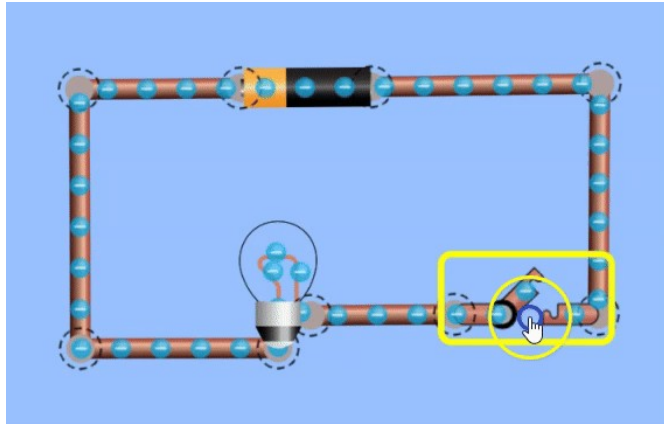
Kee ayaa ka mid ah weedhahan soo socda uu sax yahay marka laambaddu iftiimayso?

- a** Current-ku wuu hooseeyaa ka dib marka uu dhex maro laambadda.
- b** Current-ku wuu sareeyaa dhinaca taban ee wareegga.
- c** Current-ka ku jira unuggu wuu ka sareeyaa kan laambadda.
- d** Current-ka unugga, laambadda, iyo fiilooyinka waa isku mid.



Waa maxay current?

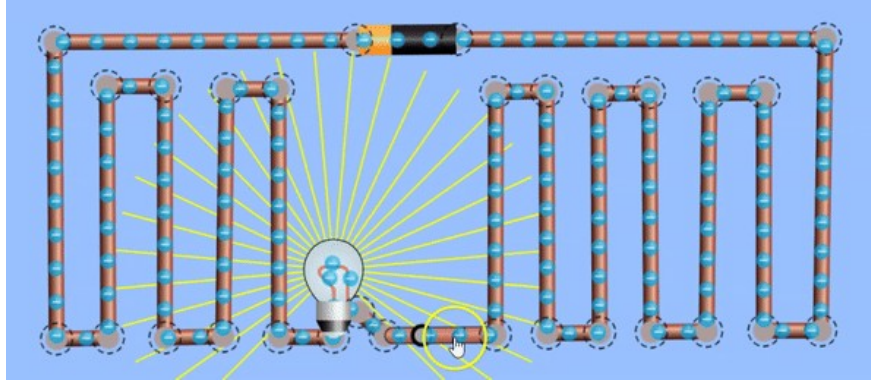
Marka switch-ka la shido, current wuu qulqulaa oo laambaddu isla markiiba way iftiimaysaa.



Marka la damiyo, current wuu joogsadaa, oo laambaddu isla markiiba way bakhtiyaa.

Waa maxay current?

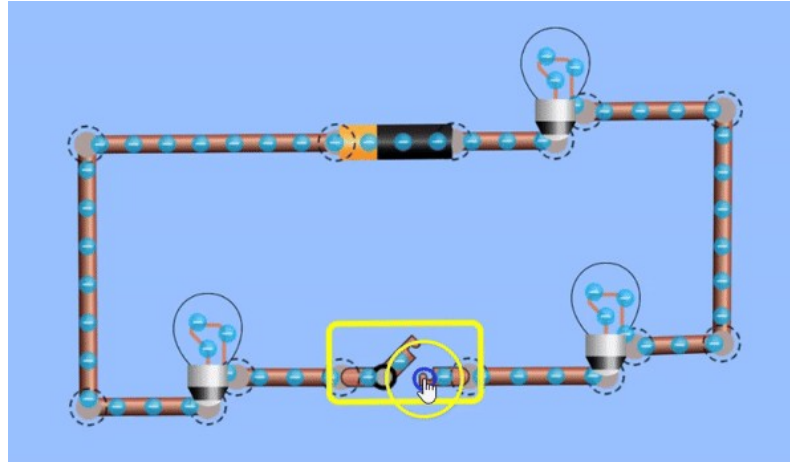
Xataa marka wareeggu leeyahay fiilooyin aad u dhaadheer, laambaddu isla markiiba way iftiimaysaa (iyo bakhtiyaa) marka la shido (ama la damiyo).



Waxaad ogaan doontaa in tani ay la mid tahay nalalka gurigaaga.

Waa maxay current?

Marka switch-ka la xiro, saddexda laambadood waxay isla waqti isku mid ah ku iftiimaan isla iftiin isku mid ah.



Electrons-ka shaqsigu waxay u dhaqaaqaan dhawr millimitir ilbiriqsi keliya, laakiin laambadaha oo dhami isla markiiba way iftiimaan.

Waa maxay current (current)?

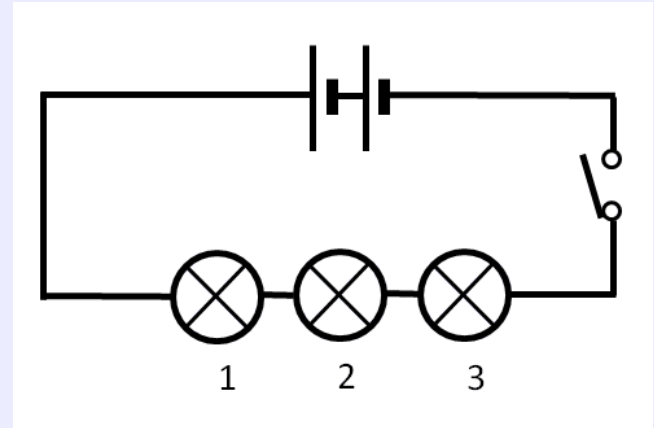
Furaha (switch) waa la xidhay wareeggan (circuit) oo nalalka (lamps) way iftiimaan.
Sheegasho (statement) intee mid ayaa run ah oo ku saabsan sida ay u iftiimaan?

a nalka (lamp) 1 ayaa marka hore iftiima

b dhammaantood isku mar bay iftiimaan

c nalka (lamp) 3 ayaa marka hore iftiima

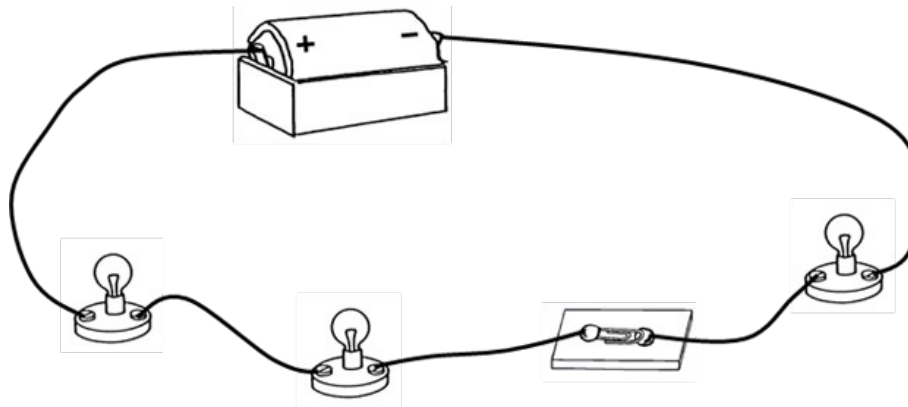
d nalalka (lamps) 1 iyo 3 waxay iftiimaan ka hor nalka (lamp) 2



Hawsha B Waa maxay current (current)?

Furaha (switch) wareeggan (circuit) waa la xidhay si nalalka (lamps) loo shido. Dhammaan nalalka (bulbs) ku jira nalalka (lamps) waa isku mid.

1. Sharax sida nalalka (bulbs) u iftiimaan (ku dar waqtiga (timing) iyo dhalaalka (brightness)).
2. Sharax sababta nalalka (bulbs) u iftiimaan sidaad ku tilmaantay.



Furaha (switch) wareeggan (circuit) waa la xidhay si nalalka (lamps) loo shido. Dhammaan nalalka (bulbs) ku jira nalalka (lamps) waa isku mid.

1. Sharax sida nalalka (bulbs) u iftiimaan (ku dar waqtiga (timing) iyo dhalaalka (brightness)).

Nalalka (bulbs) dhamaantood isku mar bay iftiimi doonaan oo waxay yeelan doonaan dhalaal (brightness) isku mid ah.

1. Sharax sababta nalalka (bulbs) u iftiimaan sidaad ku tilmaantay.

Nalalka (bulbs) waxay iftiimaan isku mar sababtoo ah waxaa jira charges (electrons) oo ku yaal dhammaan fiilooyinka (wires).

Charges (charges) dhamaantood waxay bilaabaan dhaqdhaqaaq (movement) isku marka furaha (switch) la xidho.

Nalalka (bulbs) mid kasta wuxuu yeelan doonaa dhalaal (brightness) isku mid ah sababtoo ah isku current (current) ayaa ku qulqula dhammaantood.

Unug koronto (electrical cell) wuxuu isticmaalaa falgal (reaction) kiimiko (chemical) si uu charge (charge) ugu qulqulo wareegga (circuit).

Waxay leedahay terminal (terminal) togan (positive) iyo taban (negative).

Qaybaha (components) ee wareegga (circuit) waxay ka kooban yihiin eeddo (charges) badan oo taban (negative) oo loo yaqaan elektaroonno (electrons). Marka elektaroonno (electrons) ay qulqulaan wareegga (circuit), waxaa loo yaqaan koronto qulqulaya (electric current).

Qulqulka (current) wuxuu la mid yahay meel kasta oo wareegga (circuit) ah, taasoo keenta in dhammaan qaybaha (components) ay isku mar shidaan ama damiyaan.

