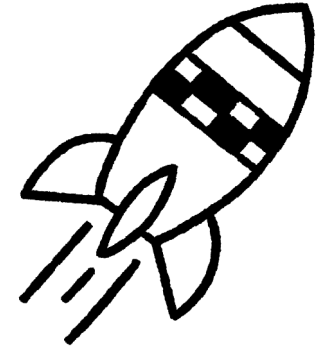


DNA, koromosoomyada, hiddo-wadayaasha iyo genome-ga



Sayniska

Cutub: Dhaxalka iyo DNA

Natiijo

Waxaan sharxi karaa farqiga u dhexeeya DNA, koromosoomyada, hiddo-wadayaasha iyo genome-ga.

Erayada muhiimka ah

genome (genome)

DNA

nucleus (nucleus)

koromosoom (chromosome)

hiddo-wade (gene)

Erayada muhiimka ah

Genome-gu waa dhammaan maadada hidde-side ee unugga; wuxuu kaydiyaa koodhka dhammaan astaamaha iyo hababka noole (organism).

DNA waa walaxda kiimikaad ee laga sameeyo maadada hidde-side; waxay kaydisaa koodhka hidde-side.

Nucleus-ku waa meesha DNA, oo loo duubay koromosoomyo, lagu kaydiyo unugyada xayawaanka, dhirta iyo fangaska.

Koromosoomku waa xirmo DNA ah oo si adag u duuban.

Hiddo-wadayaashu waa qaybo ka mid ah DNA-ga oo codeeya astaamaha iyo hababka.

Qaabka casharka

DNA, koromosoomyada, hiddo-wadayaasha iyo genome-ga



Genome-ga



DNA iyo koromosoomyada

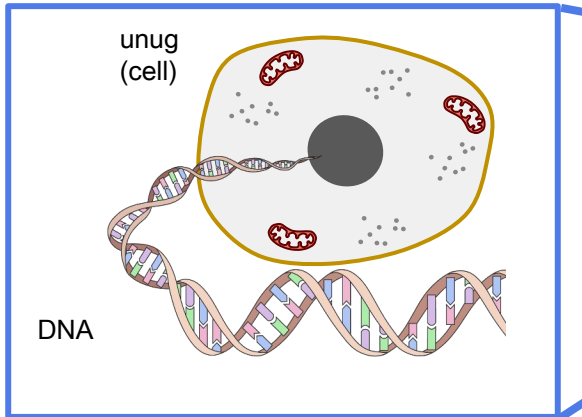
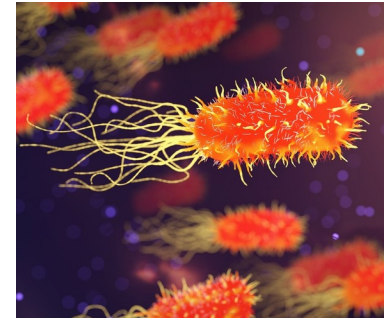
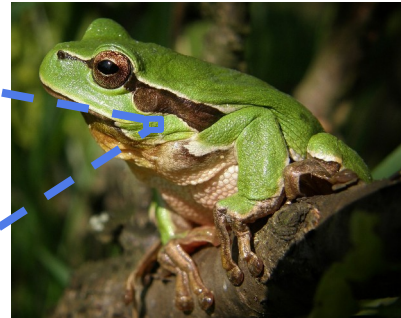


Hiddo-wadayaasha iyo qaybaha kale ee genome-ga

Dhammaan noolayaashu (organisms) waxay leeyihiin genome.

Genome-gu waa dhammaan maadada hidde-side ee noole (organism).

Genome-ga wuxuu ka samaysan yahay molecule kiimikaad ee DNA.



Dhammeysti qeexida. Dhammaan walxaha hiddo-side ee unugga waxaa loo yaqaan ...

a

hiddo-side (genes)

b

DNA

c

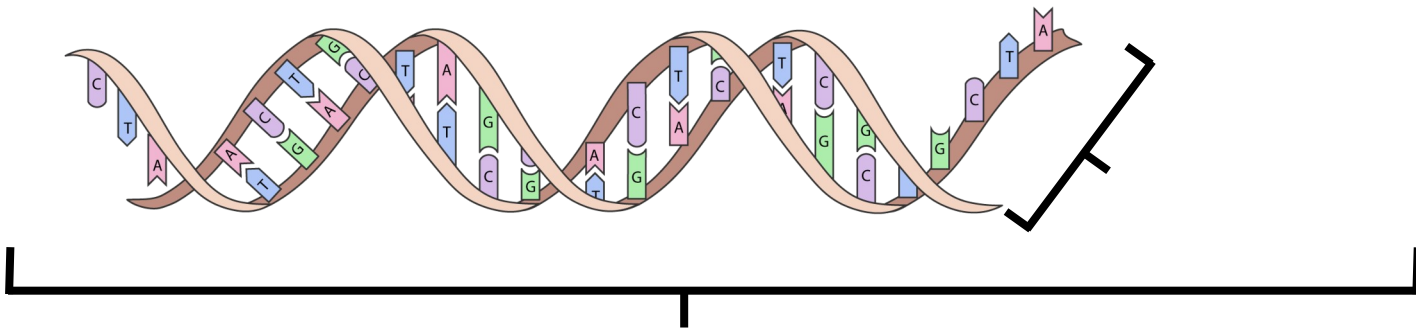
sifooyin (features)

d

hiddo-dhammayn (genome) ✓

Hiddo-dhammayn (The genome) waxay codeysaa dhammaan sifooyinka iyo hababka la dhaxlo ee noole (organism) nool.

Hiddo-dhammayn (The genome) waxay la mid tahay buug-gacmeedka tilmaamaha oo dhan ee noole (organism) nool.



DNA waa unug kiimiko oo dheer oo ka kooban koodhka hiddo-side (genetic code).

Taxanaha A, T, C iyo G ee hiddo-dhammayn (genome) waxay bixiyaan tilmaamaha lagu dhiso sifooyinka iyo lagu xakameeyo hababka nolosha.

Hiddo-dhammayn (The genome)

Dhammaan noolaha (organisms) dhulka waxay leeyihiin isku ekaansho taxanaha hiddo-dhammayn (genome sequence).

Kala duwanaanshaha taxanaha hiddo-dhammayn (genome sequence) ayaa naga dhigaya kuwa gaar ah.



Xubnaha qoyska isku midka ah waxay leeyihiin isku ekaanshaha ugu badan taxanaha hiddo-dhammayn (genome sequence), iyo kala duwanaansho yar oo keliya.



Xubnaha isku nooleed (same species) ee aan qaraabada ahayn waxay leeyihiin isku ekaansho badan, laakiin kala duwanaansho yar oo dheeri ah hiddo-dhammayn (genomes) kooda.



Xubnaha noocyada (species) kala duwan waxay leeyihiin kala duwanaansho aad u badan hiddo-dhammayn (genomes) kooda.

Hiddo-dhammayn (genomes) kayagu waxay isku eg yihiin in ka badan inta aad u malaynayso:

Jawaabaha:

99.9 98 75 60 60 30

**Boqolkiiba
(percentage) isku
midka ah ee habka
hiddo-wadaha (genome
sequence)**



Dadka iyo dadka kale (chimpanzees)



Dadka iyo digaagga (chickens)

Dadka iyo dhirta duqsiyada (fruit flies)

Dadka iyo mooska (bananas)

Dadka iyo ubaxa daffodil (daffodils)



Hiddo-wadaha (genome)



Laga bilaabo kuwa ugu isku midka badan, dhiga alaabtan sida ay u kala horreeyaan marka loo eego isku midka hiddo-wadaha (genomes).

a

Xubnaha noocyada kala duwan.

b

Xubnaha qoyska isku midka ah.

c

Xubnaha aan qaraabada ahayn ee isku nooca ah.

Jawaabaha:

3

1

2

Ardaydu waxay ka wada hadlayaan fahankooda hiddo-wadaha (genome).



Layla

Dhammaan xayawaanku waxay leeyihiin hiddo-wade (genome).



Axmed

Hiddo-wadaha (genome) waa eray kale oo loo yaqaan DNA.



Yacquub

Nooc kasta oo kala duwan oo dhulka ku nool wuxuu leeyahay hiddo-wade (genome) isku mid ah.



Suad

Hiddo-wadaha (genome) waa koodhka hiddo-side (genetic code) ee dhammaan astaamaha dadka.

1. Hagaaji fikrad kasta oo ka mid ah adigoo beddelaya ama ku daraya faahfaahin dheeri ah.

1. Hagaaji fikrad kasta oo ka mid ah fikradahooda adoo beddelaya ama ku daraya faahfaahin dheeri ah.

Layla: Dhammaan xayawaanku waxay leeyihiin genome (genome).

Yacquub: Nooc kasta oo kala duwan oo dhulka ku nool ayaa leh genome (genome) isku mid ah.

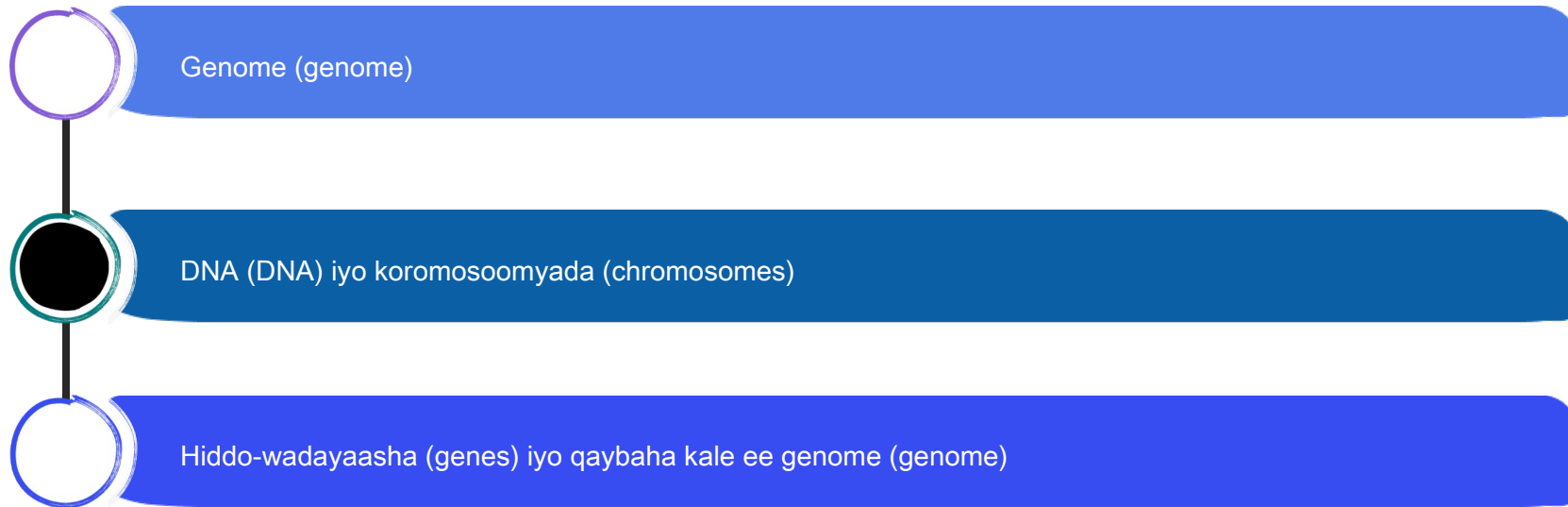
Axmed: Genome (genome) waa erey kale oo loo yaqaan DNA (DNA).

Suad: Genome (genome) waa koodhka hidde-side (genetic code) ee dhammaan astaamaha bini'aadamka.

- Layla: Dhammaan noolaha (organisms) noolaha ayaa leh genome (genome), oo ay ku jiraan dhirta, bakteeriyada, fangaska iyo xayawaanka.
- Yacquub: Dhammaan shakhsiyaadka noocyada kala duwan ee dhulka ayaa leh genome (genome) gaar ah. Kuwa isku nool ayaa lahaan kara isku ekaansho badan oo genome (genome) kooda ah.
- Axmed: Genome (genome) waa dhammaan DNA (DNA) ee ku jira noole (organism).
- Suad: Genome (genome) waa koodhka hidde-side (genetic code) ee dhammaan astaamaha iyo hababka la dhaxlo ee noolaha (organisms).

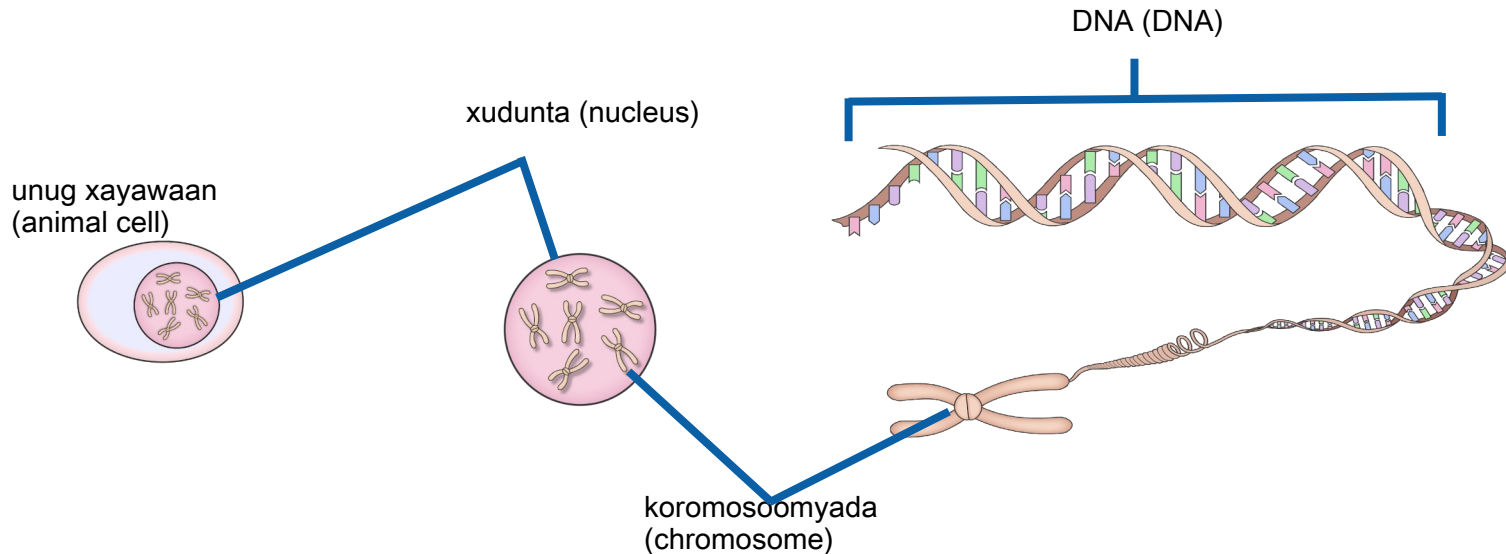
Qaabka casharka

DNA (DNA), koromosoomyada (chromosomes), hiddo-wadayaasha (genes) iyo genome (genome)



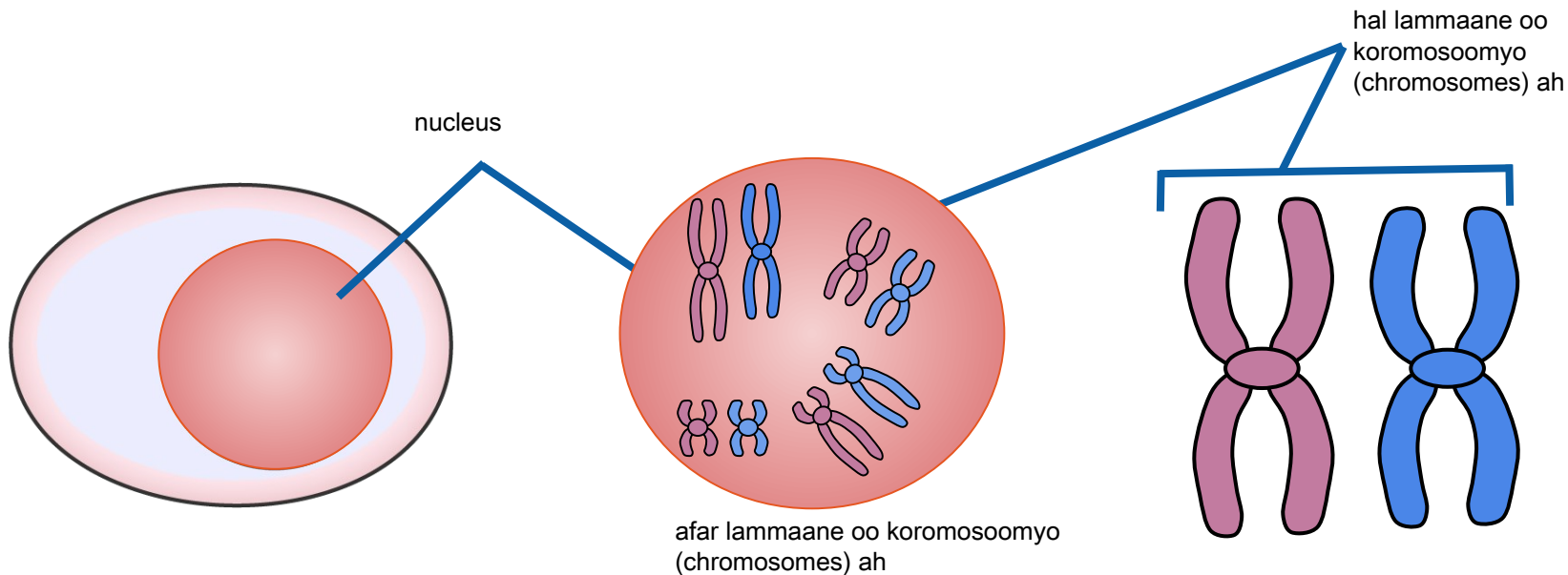
Unugyada xayawaanka, dhirta iyo fangaska, dhammaan DNA (DNA) ee ka kooban genome (genome) waxaa lagu kaydiyaa xudunta unugga (cell nucleus).

DNA (DNA) waxaa loo habeeyaa qaab xirmooyin (packages) loo yaqaan koromosoomyada (chromosomes).



Waxaa jira laba nuqul oo koromosoomyada (chromosomes) ah oo ku yaal nucleus-ka, hal nuqul oo ka yimid waalid kasta oo qofka.

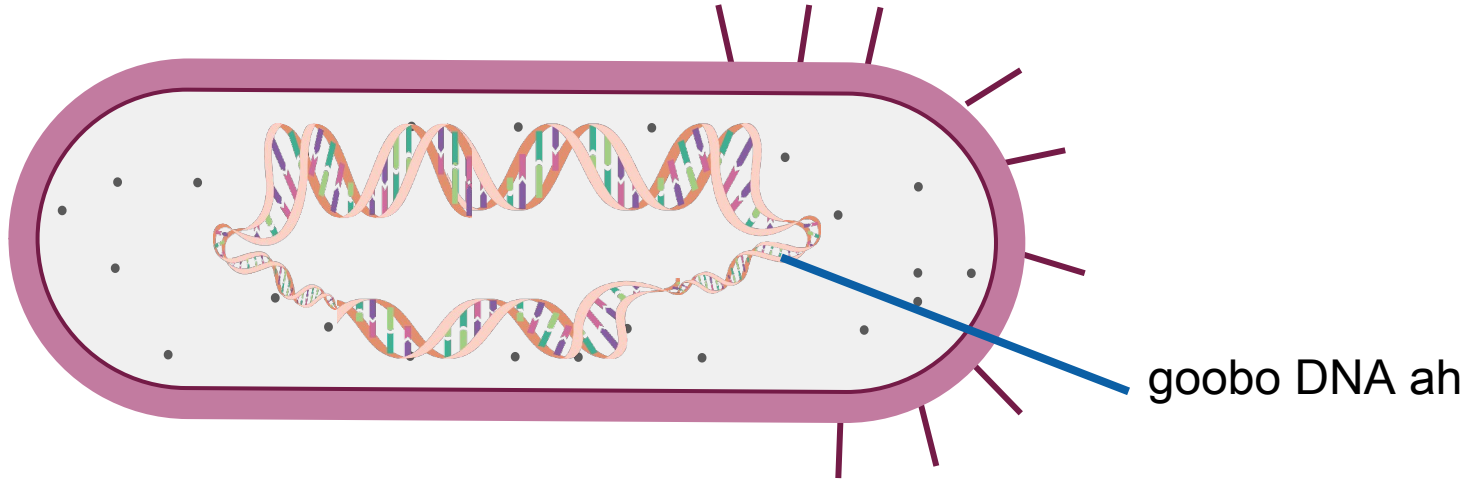
Dadku waxay leeyihiin 23 lammaane oo koromosoomyo (chromosomes) ah.



DNA iyo koromosoomyada (chromosomes)

Bakteeriyadu (bacteria) ma laha nucleus unug.

Waxay leeyihiin hal koromosoome (chromosome). Waa goobo DNA ah oo ku kaydsan cytoplasm-ka unugga.

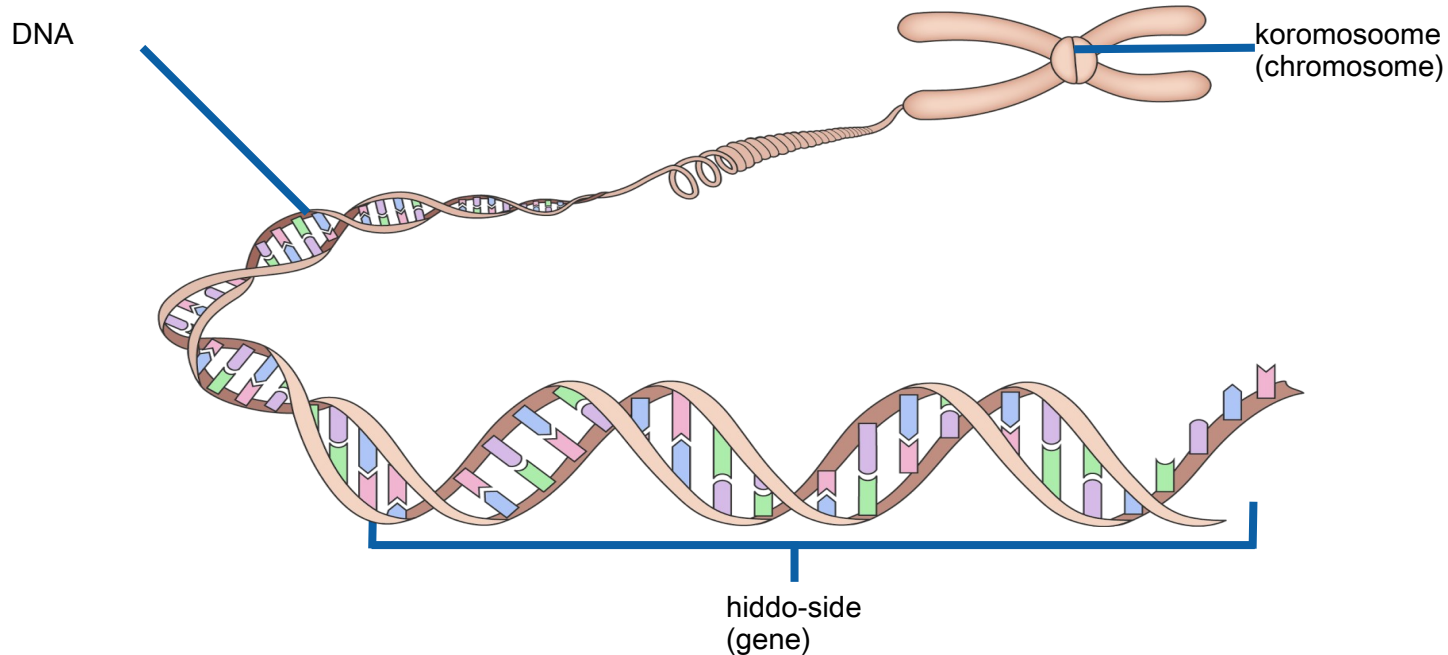


DNA iyo koromosoomyada (chromosomes)



Sharaxaad

Qaybaha DNA-da ee codeeya astaamaha iyo hababka waxaa loo yaqaan hiddo-sideyaal (genes).



Run mise been?

Hiddo-sideyaasha (genes) waxay ka samaysan yihiin koromosoomyo (chromosomes).



Run



Been



Sabab u sheeg jawaabtaada



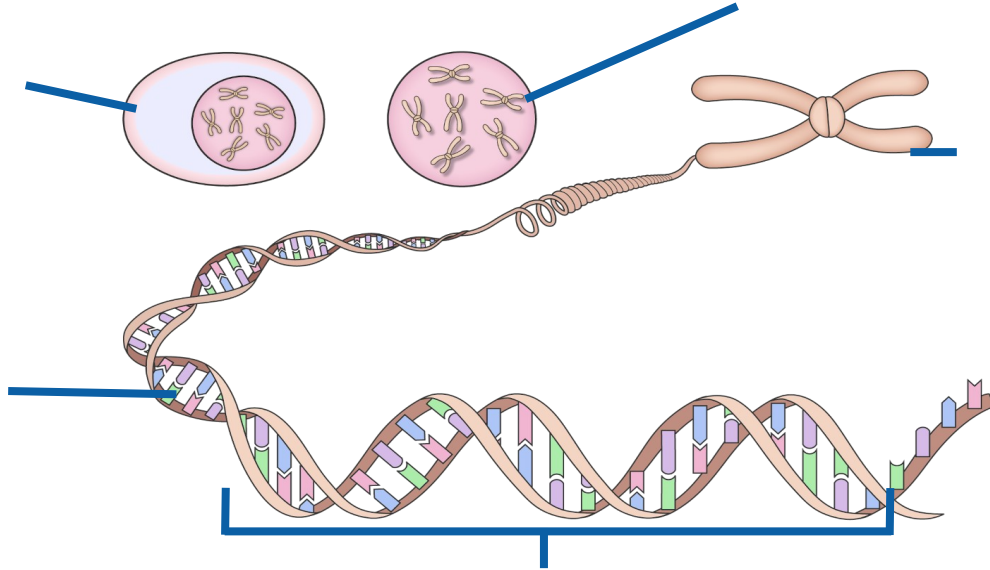
Koromosoomyada (chromosomes) waxay u kala habaysan yihiin xirmo loo yaqaan hiddo-sideyaal (genes).



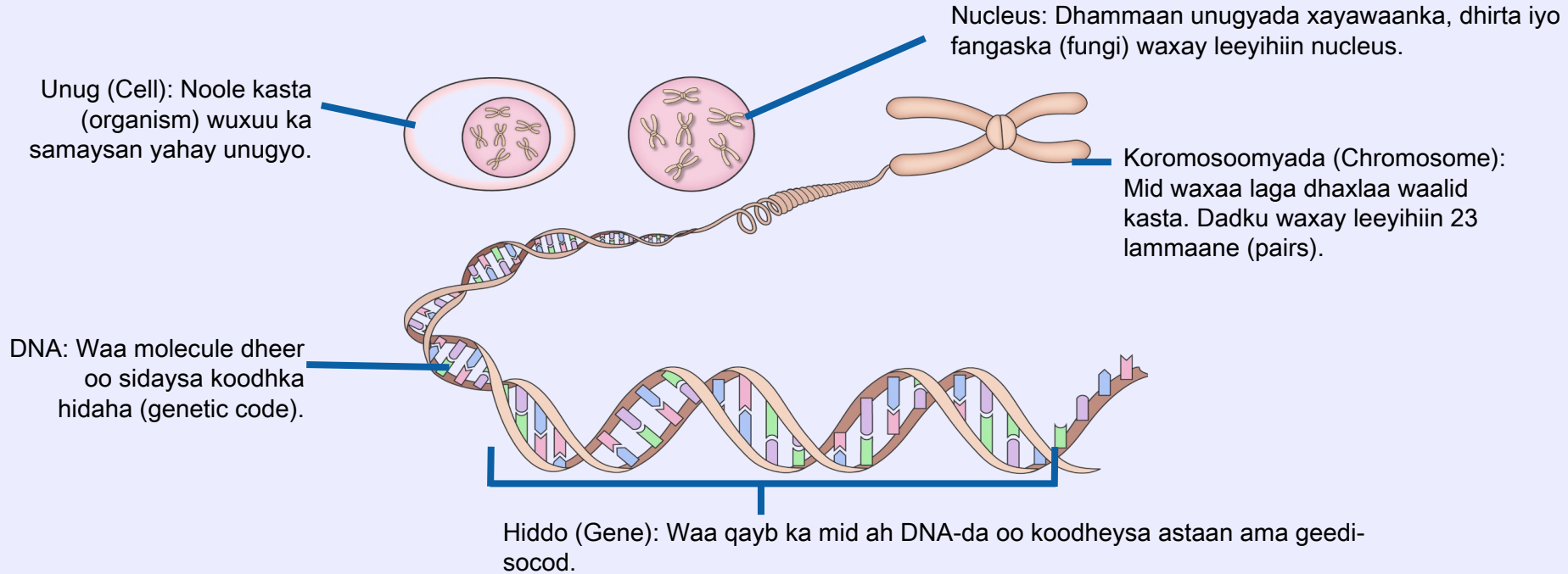
Hiddo-sideyaasha (genes) waa qaybo ka mid ah DNA-da ee ku jira koromosoomo (chromosome) oo codeeya astaamaha.



1. Ku calaamadee jaantuskan kaydinta DNA-da.
2. Qor sharaxaad kooban oo calaamad kasta ah.

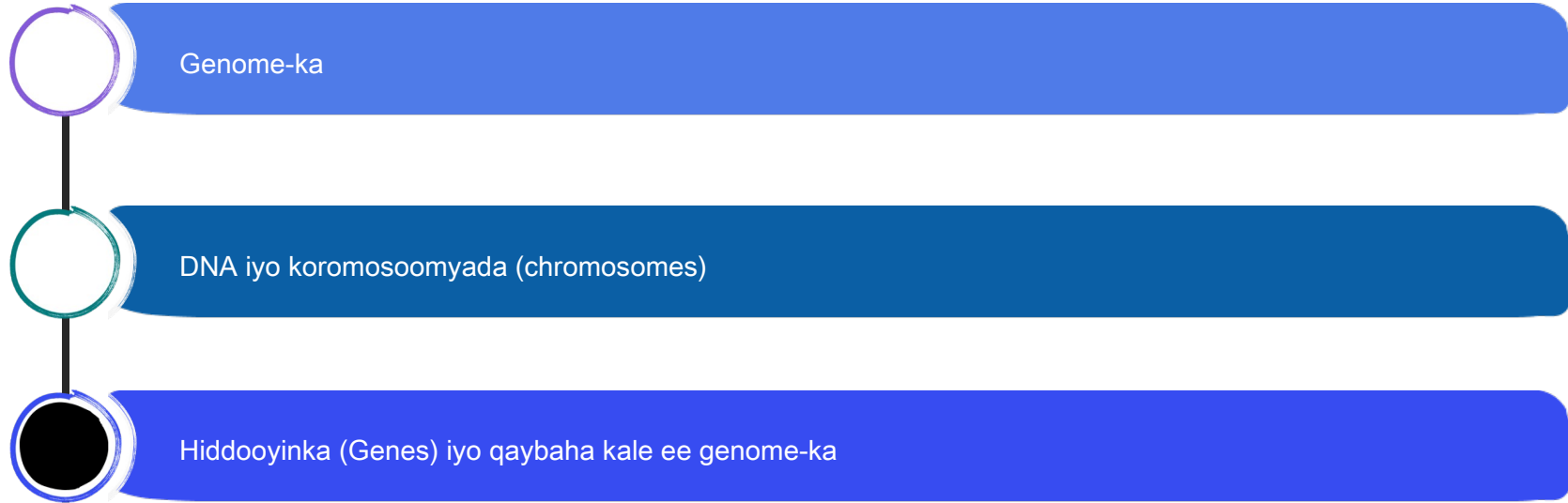


1. Ku calaamadee jaantuskan kaydinta DNA-da.
2. U qor sharaxaad kooban calaamad kasta.



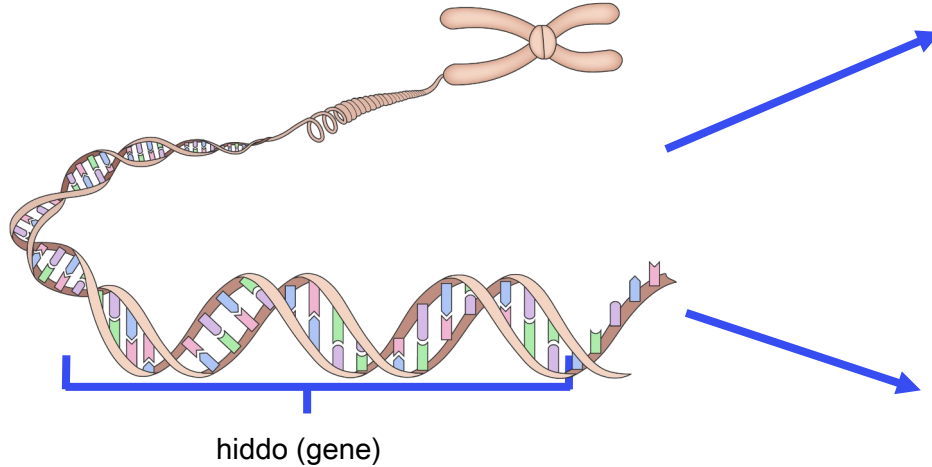
Qaabka casharka

DNA, koromosoomyada (chromosomes), hiddooyinka (genes) iyo genome-ka



Hiddooyinka (Genes) iyo qaybaha kale ee genome-ka

Hiddooyinku (Genes) waxay koodheeyaan astaamaha aad arki karto, iyo geedi-socodka aadan arki karin, sida koritaanka (growth).



Hiddooyinku (Genes) waxay koodheeyaan geedi-socodyada, tusaale: koritaanka (growth).



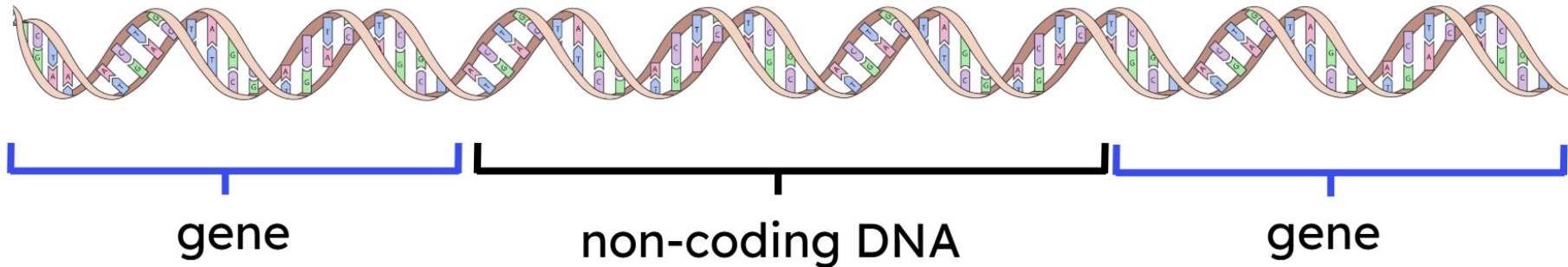
Hiddooyinku (Genes) waxay koodheeyaan astaamaha, tusaale: midabka isha (eye colour).

Hiddooyinka (Genes) iyo qaybaha kale ee genome-ka

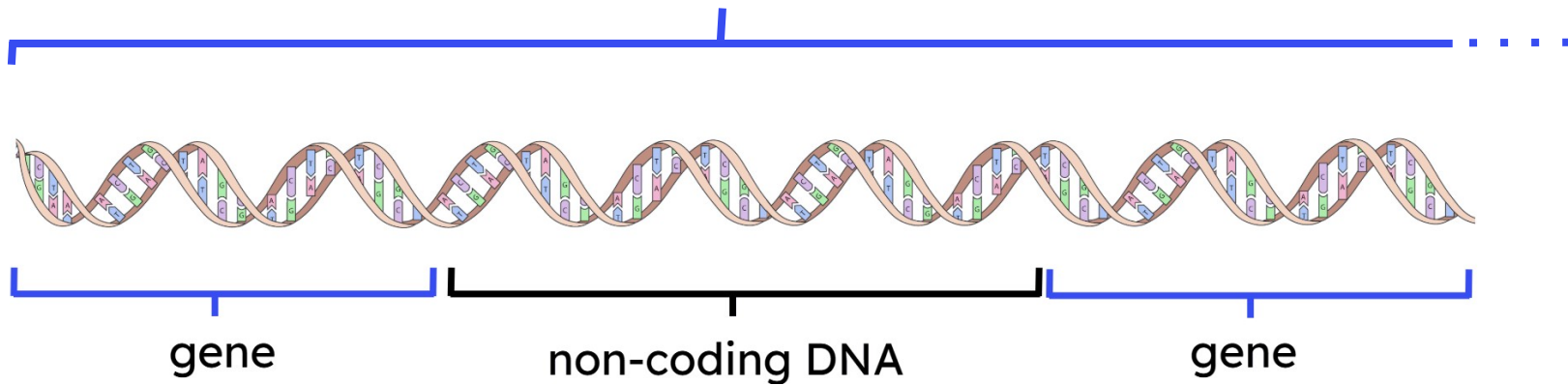
Qaybaha qaarkood ee DNA-da ee genome-ka kuma koodheeyaan astaamo ama geedi-socodyo. Qaybahani ma aha hiddooyin (genes).

Qaybahan DNA-da ee aan koodheyn (non-coding) waxay ku yaalaan inta u dhaxaysa hiddooyinka (genes).

Waxay kaaliyaan xakamaynta goorta tilmaamaha ku jira hiddooyinka (genes) la isticmaalo.



Inta badan unugyada noole (organism) waxay leeyihiin nuqul ka mid ah genome-ka.

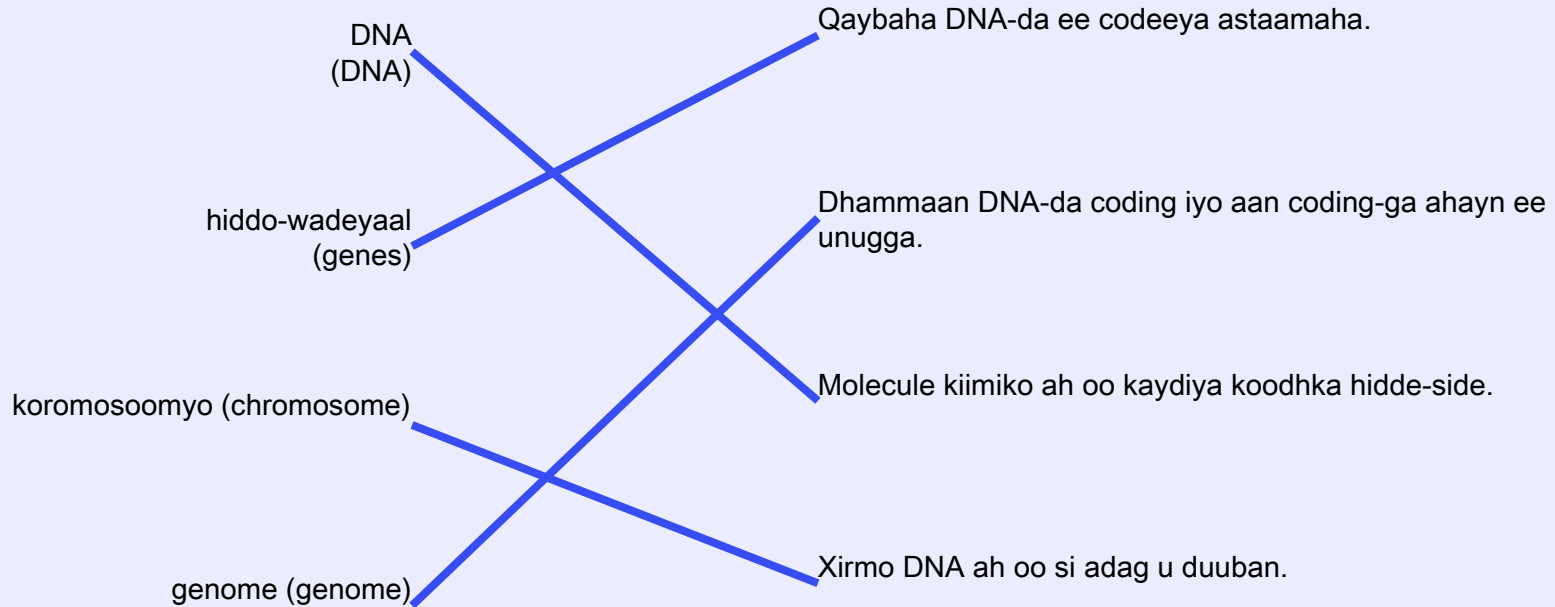


Genome-ku wuxuu ka kooban yahay dhammaan hiddo-wadeyaasha (genes) iyo qaybaha aan codeyn ee DNA-da.

Hiddo-wadeyaasha (genes) iyo qaybaha kale ee genome-ka



Isku xidh erayga muhiimka ah iyo qeexitaankiisa saxda ah.



Barbardhigga habaynta DNA-da:

Nucleus-ku wuxuu la mid yahay... maktabad kaydisa buugaagta tilmaamaha.

Genome-ku wuxuu la mid yahay... dhammaan buugaagta tilmaamaha.

Hal koromosoomyo (chromosome) wuxuu la mid yahay... hal buug tilmaameed.

DNA-da aan coding-ga ahayn waxay la mid tahay...

... dhammaan cutubyada buugga ee aan ku jirin tilmaamo.

1. Maxaad u malaynaysaa hadal kasta?

a

Unugyada (cells) badankood ee noole (organism) waxay leeyihiin nuqul (copy) ka mid ah genome-ka.

b

Hiddo-sideedyadaada (Genes) iyo genome-kaagu waa isku mid.

c

Hiddo-sideedyadu (Genes) waxay codeeyaan (code) kaliya sifooyinka aad arki karto.

d

Qaybaha aan codeyn (Non-coding) ee DNA-ga ma faa'iido, waa qashin (junk) kaliya.

Waxaan ahay hubaa kani waa sax	I u malaynay aa kani waa sax	I u malaynay aa kani waa qalad	Waxaan ahay hubaa kani waa qalad

1. Maxaad ka qabtaa hadal kasta?

a

Inta badan unugyada noole (organism) waxay leeyihiin nuqul ka mid ah genome-ka.

b

Hiddo-wadahaaga (genes) iyo genome-kaagu waa isku mid.

c

Hiddo-waduhu (genes) waxay codeeyaan oo kaliya sifooyinka aad arki karto.

d

Qaybaha DNA-da aan codeynin ma aha kuwo waxtar leh, waa qashin.

Waxaan
ahay
hubaa
kani waa sax

I
u
malaynay
aa kani
waa sax

I
u
malaynay
aa kani
waa qalad

Waxaan
ahay
hubi
kani waa
khalad



2. Sidee dib ugu qori lahayd hadal kasta oo khalad?

b Hiddo-wadahaaga (genes) iyo genome-kaagu waa isku mid.



c Hiddo-waduhu (genes) waxay codeeyaan oo kaliya sifooyinka aad arki karto.



d Qaybaha DNA-da aan codeynin ma aha kuwo waxtar leh, waa qashin.



2. Sidee dib ugu qori lahayd hadal kasta oo khalad ahaa?

b

Hiddo-wadahaaga (genes) iyo genome-kaagu waa isku mid.

Hiddo-wadahaagu (genes) waa qaybo ka mid ah genome-kaaga.

**c**

Hiddo-waduhu (genes) waxay codeeyaan oo kaliya sifooyinka aad arki karto.

Hiddo-waduhu (genes) waxay codeeyaan sifooyinka aad arki karto iyo hababka sida koritaanka.

**d**

Qaybaha DNA-da aan codeynin ma aha kuwo waxtar leh, waa qashin.

Qaybaha DNA-da aan codeynin waxay gacan ka geystaan xakamaynta marka tilmaamaha ku jira hiddo-wadaha (genes) la isticmaalo.



Soo koobid

DNA (DNA), koromosoomyo (chromosomes), hiddo-wadeyaal (genes) iyo genome-ka (genome)

- Dhammaan maadada hidde-side (genetic material) ee noole (organism) waa genome-kiisa.
- Noolaha (organisms) isku xidhan waxay leeyihiin waxyaabo badan oo isku mid ah oo ku jira genome-yadooda; kala duwanaanshaha genome-ka ayaa inaga dhigaya kuwo gaar ah.
- Genome-ku wuxuu ka samaysan yahay DNA (DNA), oo loo duubay qaabab si adag u xidhan oo loo yaqaan koromosoomyo (chromosomes).
- Unugyada jidhka bini'aadamka waxay leeyihiin 23 lammaane oo koromosoomyo (chromosomes) ah, oo lagu kaydiyo xudunta unugga (cell nucleus); bakteeriyadu waxay leedahay hal koromosoom (chromosome) oo lagu kaydiyo saytobalaasmka (cytoplasm).
- Qaybaha DNA (DNA) ee koromosoomyada (chromosomes) waxaa loo yaqaan hiddo-wadeyaal (genes), kuwaas oo kaydiya tilmaamaha lagu dhiso sifooyinka la dhaxlo iyo xakamaynta hab-nololeedyada (life processes).
- Qaybaha kale ee koromosoomyada (chromosomes) waa DNA (DNA) aan koodh ahayn (non-coding DNA), oo ka kooban tilmaamo xakameeya goorta macluumaadka hiddo-wadeyaasha (genes) la isticmaalo.