

Hvat er eitt genomatlas?

Sunnvør K. í Kongsstovu

Námslektari og postdoc

Náttúruvísindadeildin

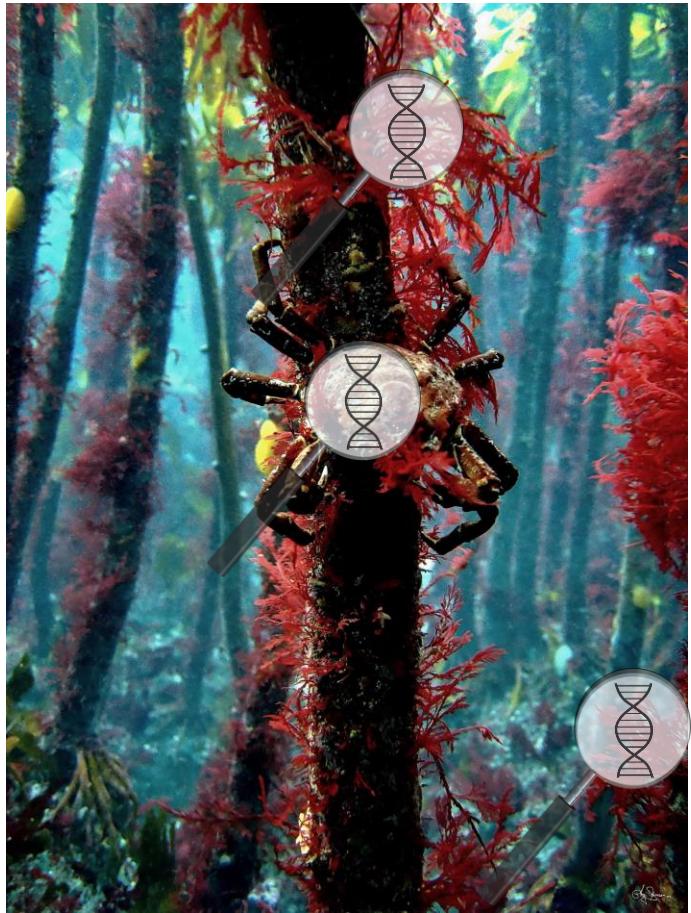
Hvat er DNA?



DNA = Deoxyribonucleic acid



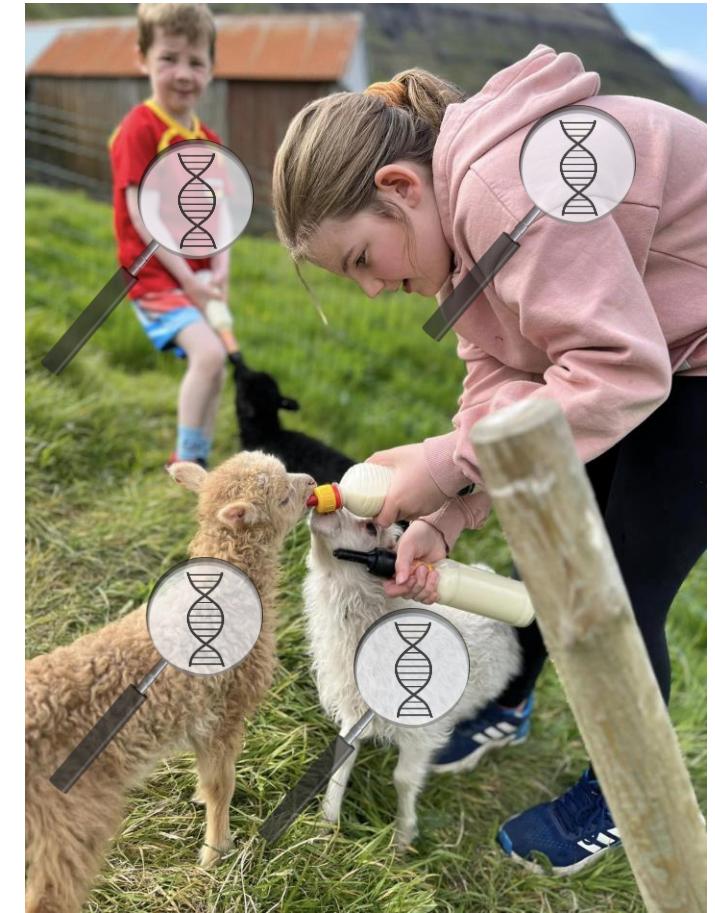
Hvat er DNA?



Mynd: Ingi Sørensen



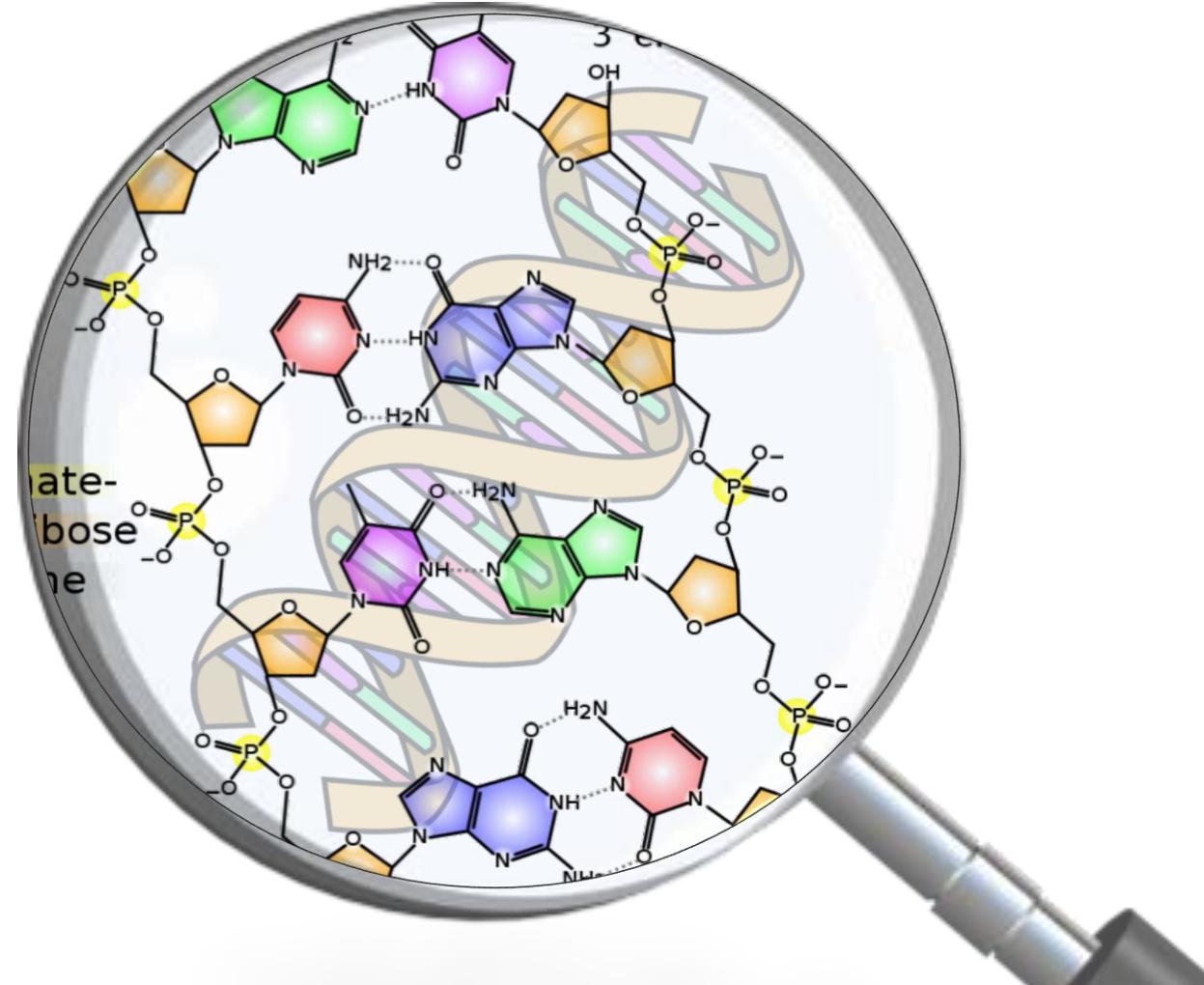
Mynd: Freya Muller



Mynd: Óluva Klettskarð

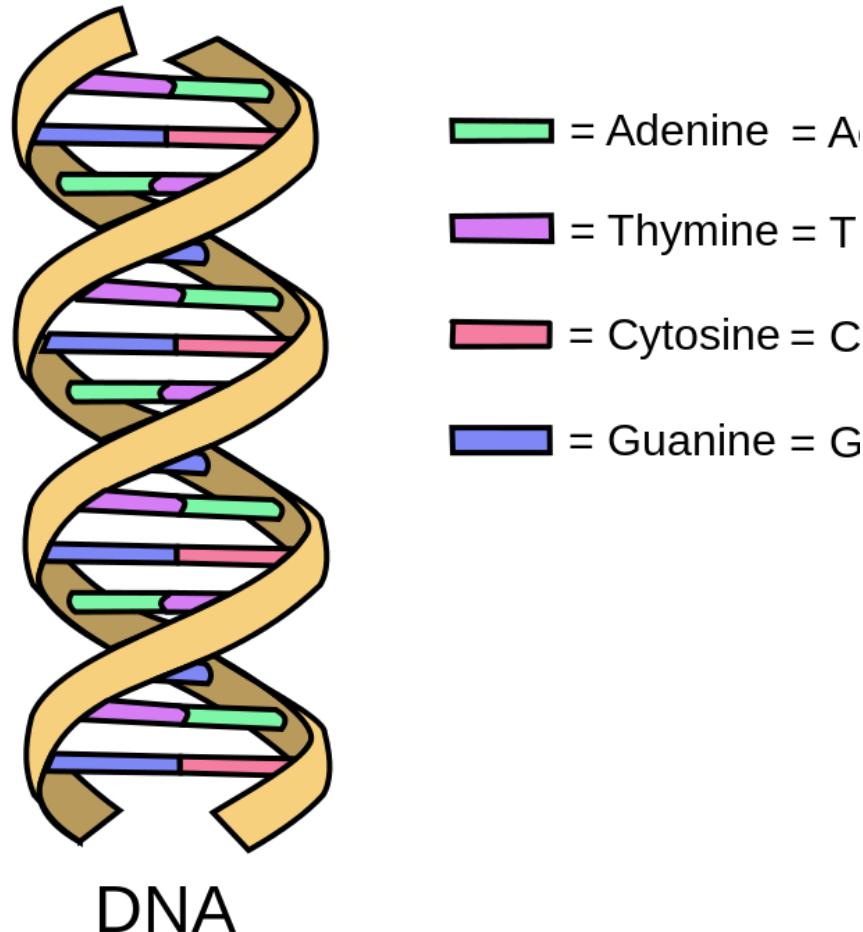
Hvat er DNA?

- DNA inniheldur upplýsingar



DNA inniheldur upplýsingar

- DNA er ein kota, sum vit kunnu lesa



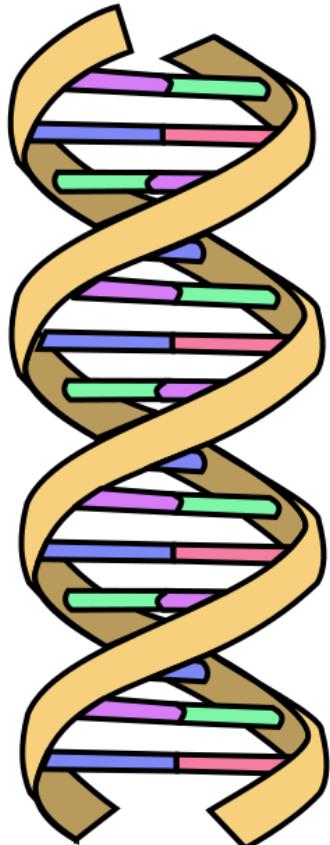
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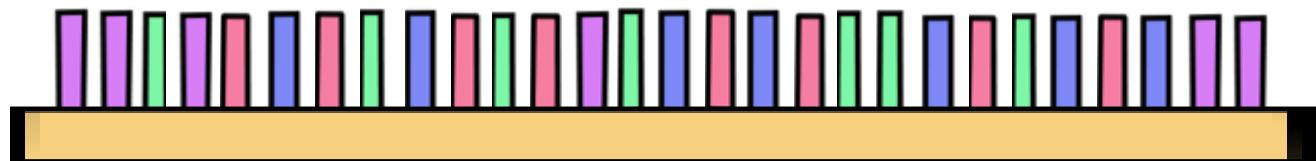
A • -	J • ----	S • • •
B - • • •	K - • -	T -
C - • - •	L • - • •	U • • -
D - • •	M --	V • • • -
E •	N - •	W • - -
F • • - •	O ---	X - • • -
G --- •	P • - - •	Y - • - -
H • • • •	Q - - - •	Z - - • •
I • •	R • - -	

DNA inniheldur upplýsingar

- Hvussu kunnu vit skilja hesa kotuna?



DNA



DNA inniheldur upplýsingar

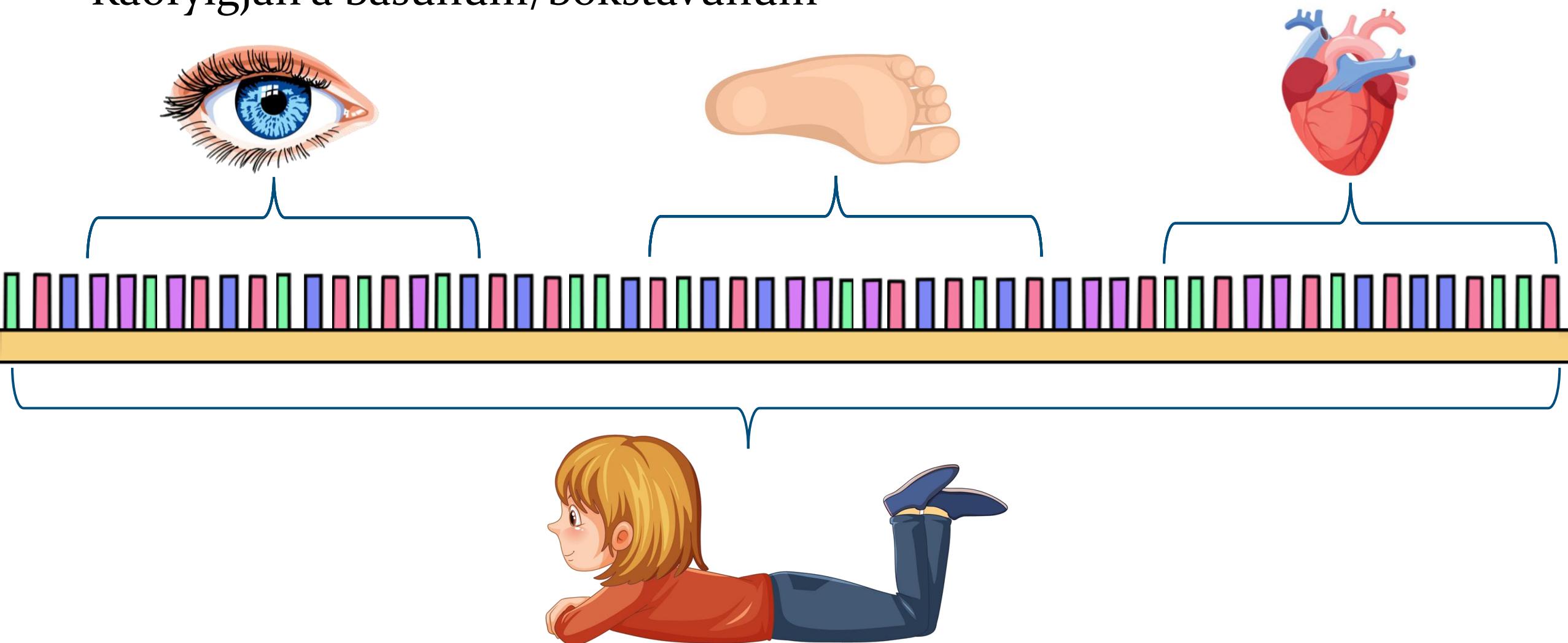


- Raðfylgjan á basunum/bókstavunum

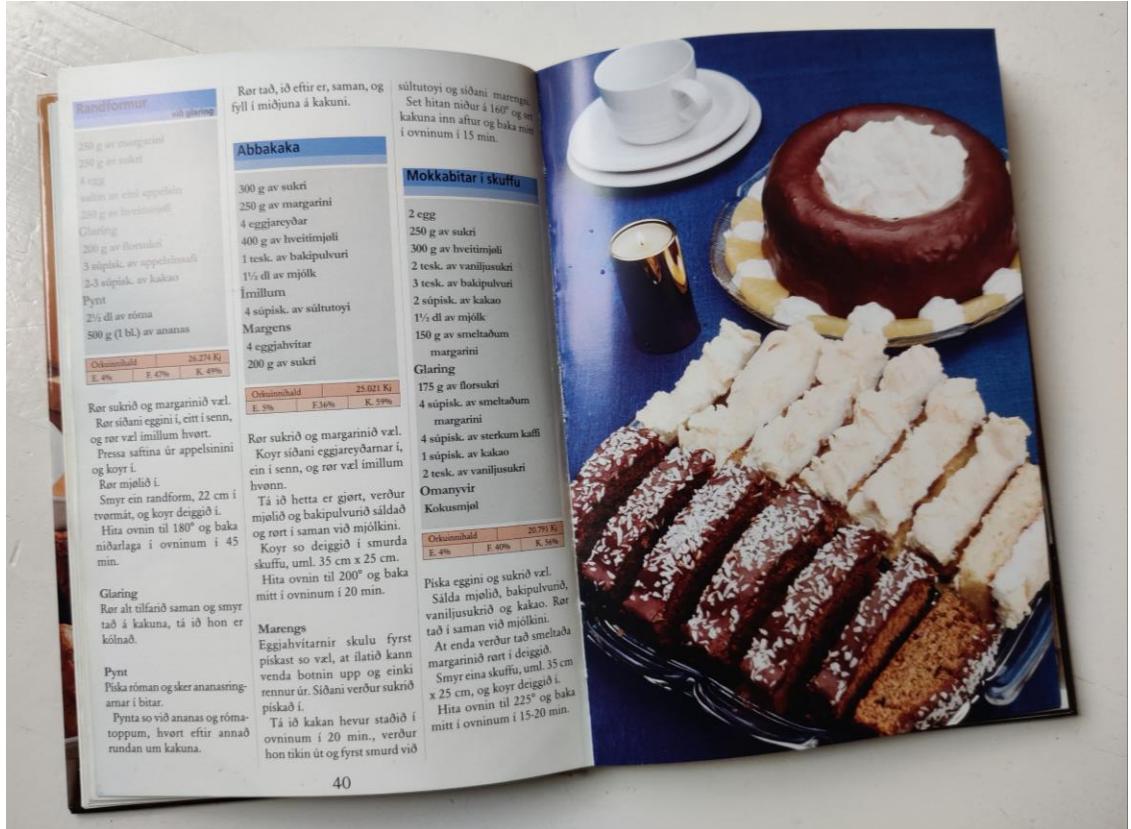


DNA inniheldur upplýsingar

- Raðfylgjan á basunum/bókstavunum

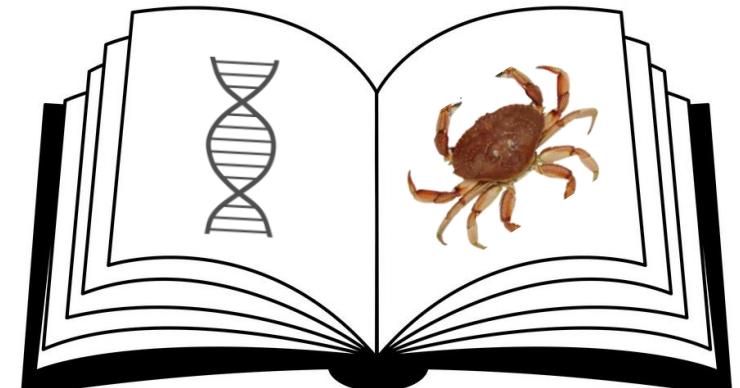
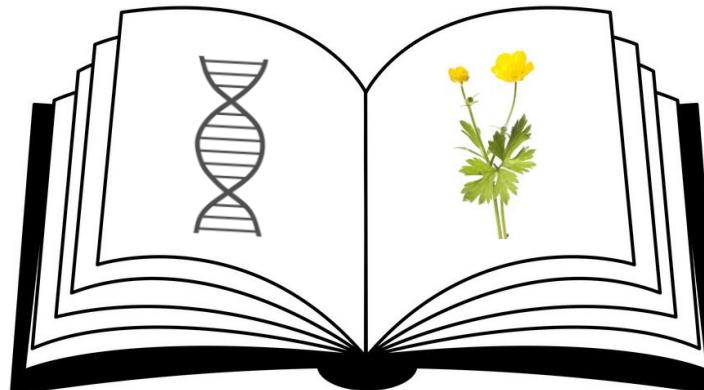
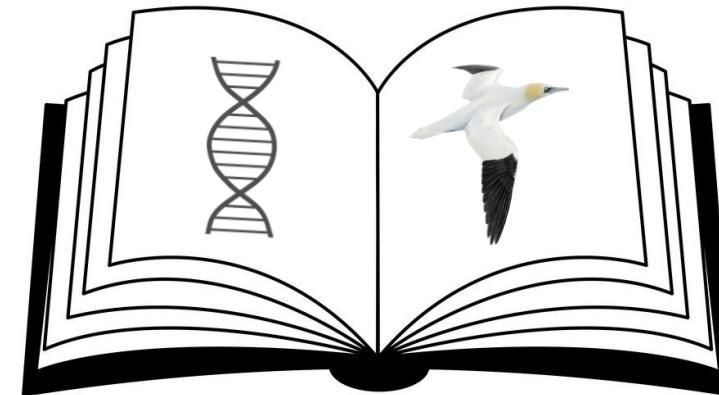
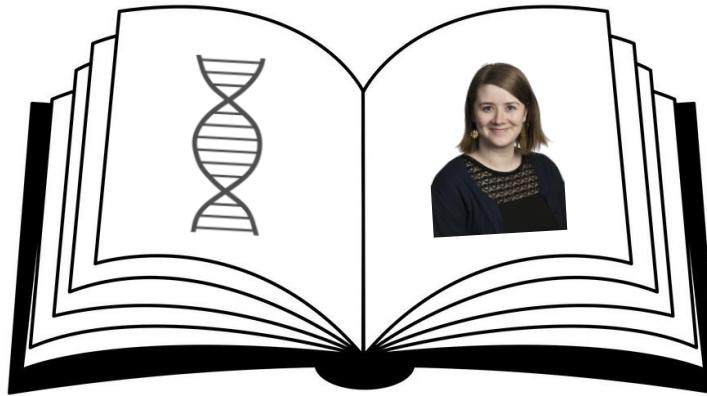


DNA er ein uppskrift



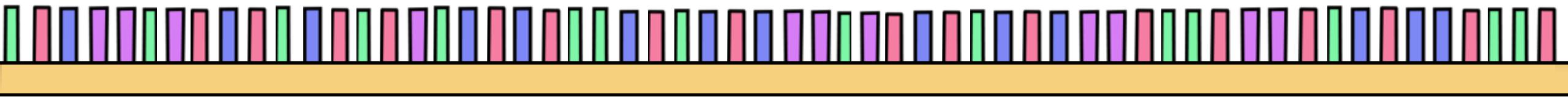
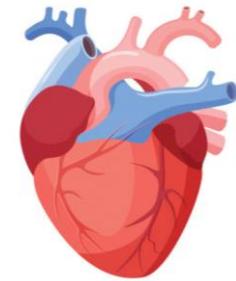
DNA er ein uppskrift

- Mitt DNA er ein uppskrift upp á meg



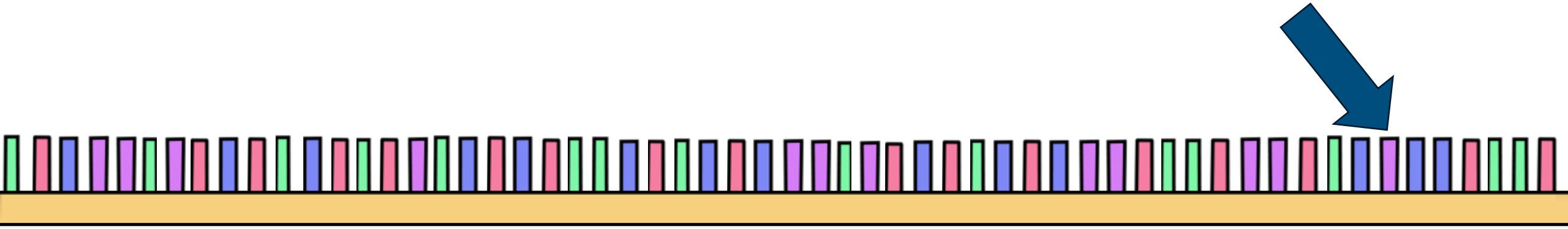
DNA er ein uppskrift

- Viðhvört eru feilir í uppskriftini



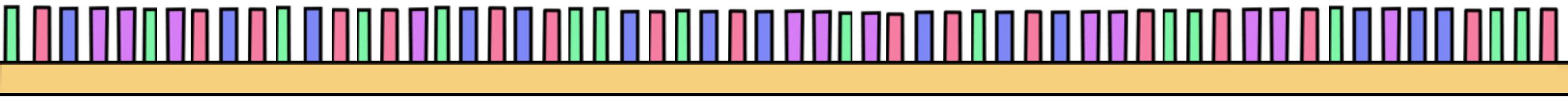
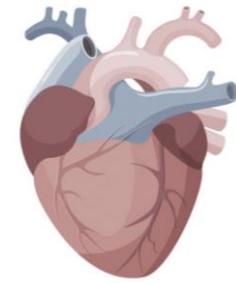
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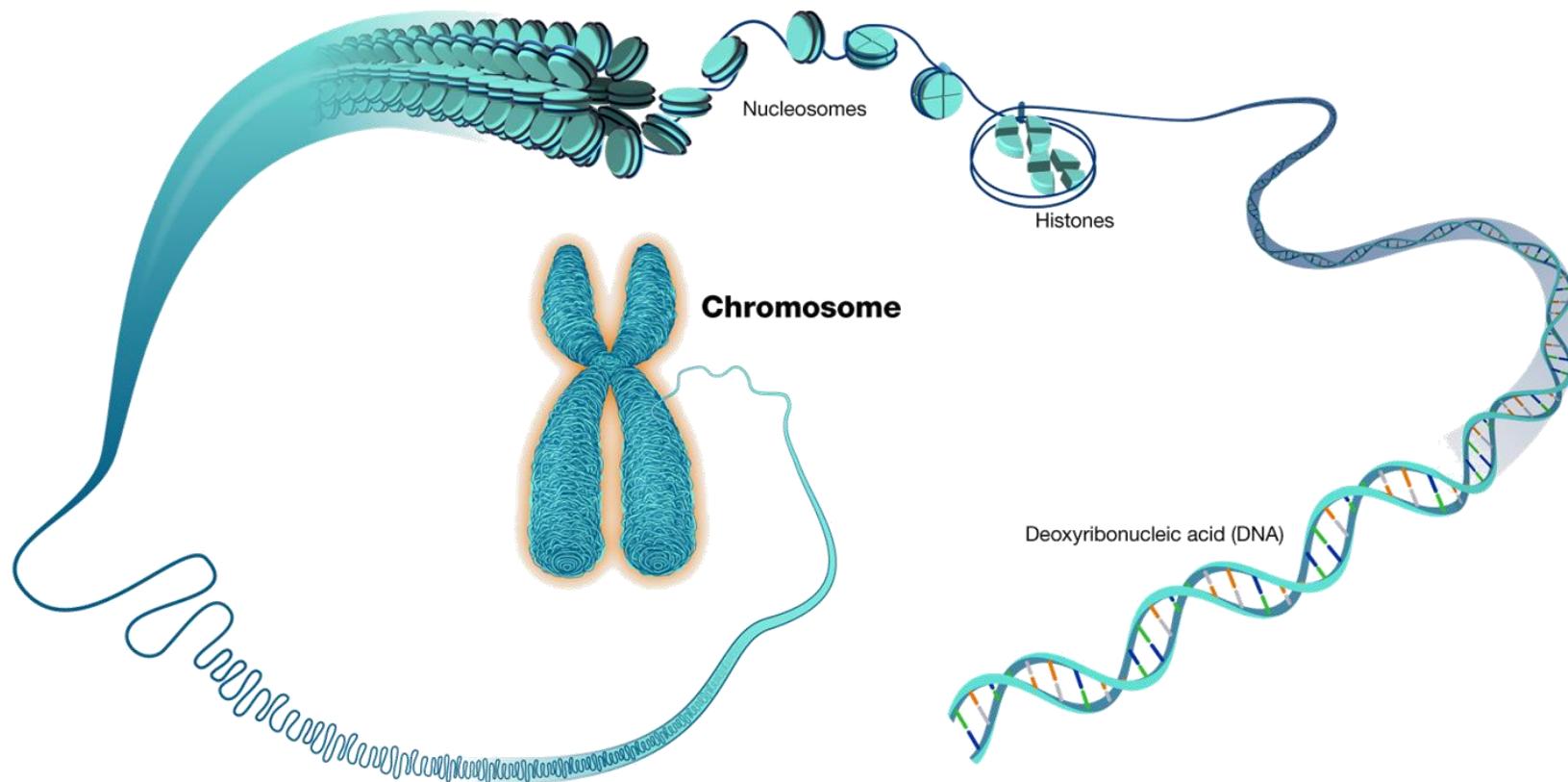
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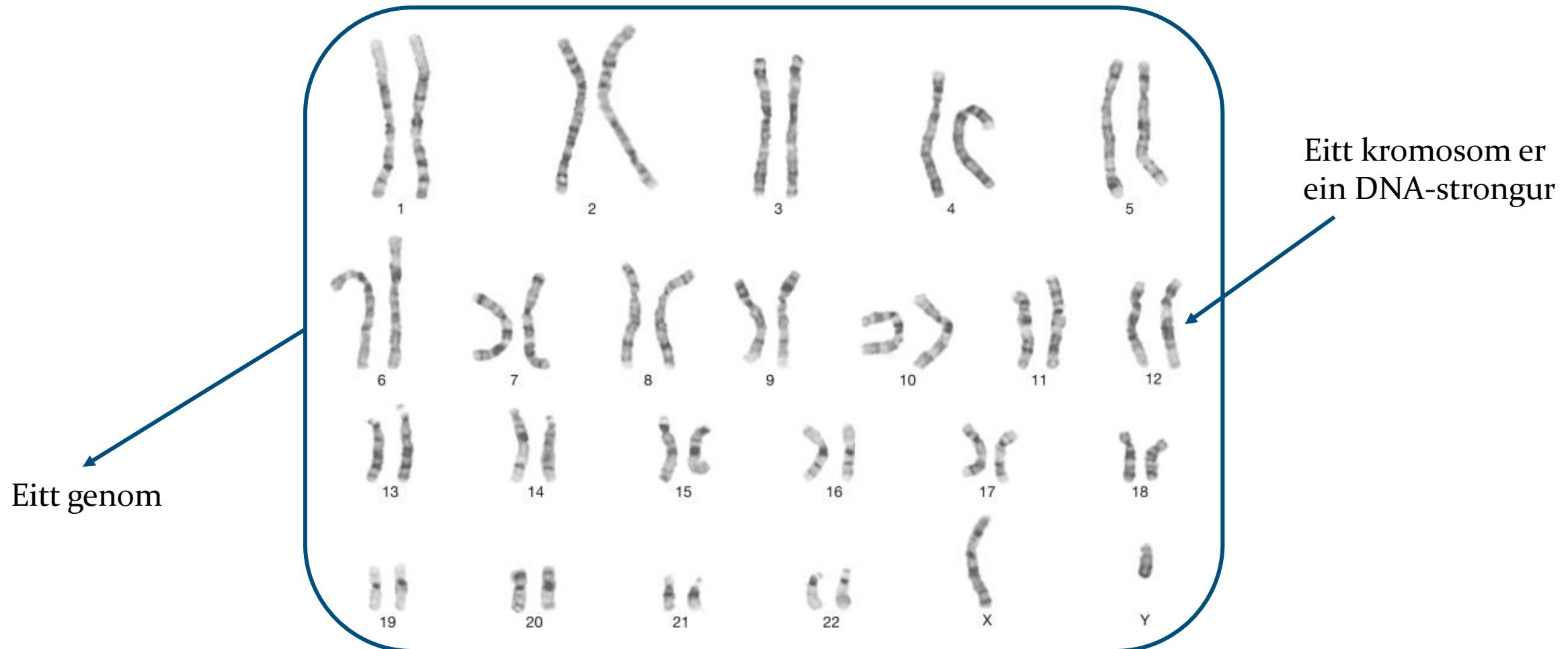
Hvat er eitt genom?

- DNA er pakkað saman í kromosom

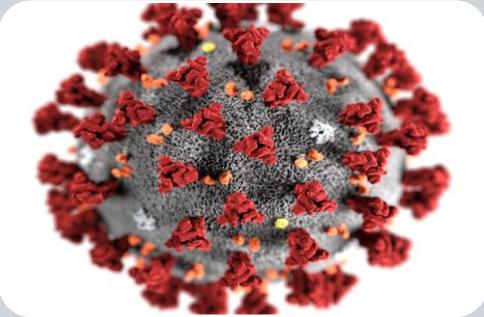
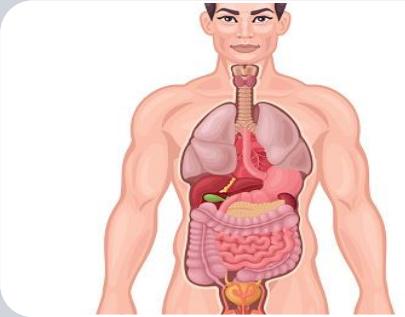


Hvat er eitt genom?

- Eitt genom er øll kromosomini - Alt okkara DNA



Genom eru ymisk



Menniskja

Homo sapiens
46 kromosom
3.117.275.501

Nebbasild

Ammodytes marinus
50 kromosom
777.800.000

Mistilteinur

Viscum album
20 kromosom
91.100.000.000

Korona

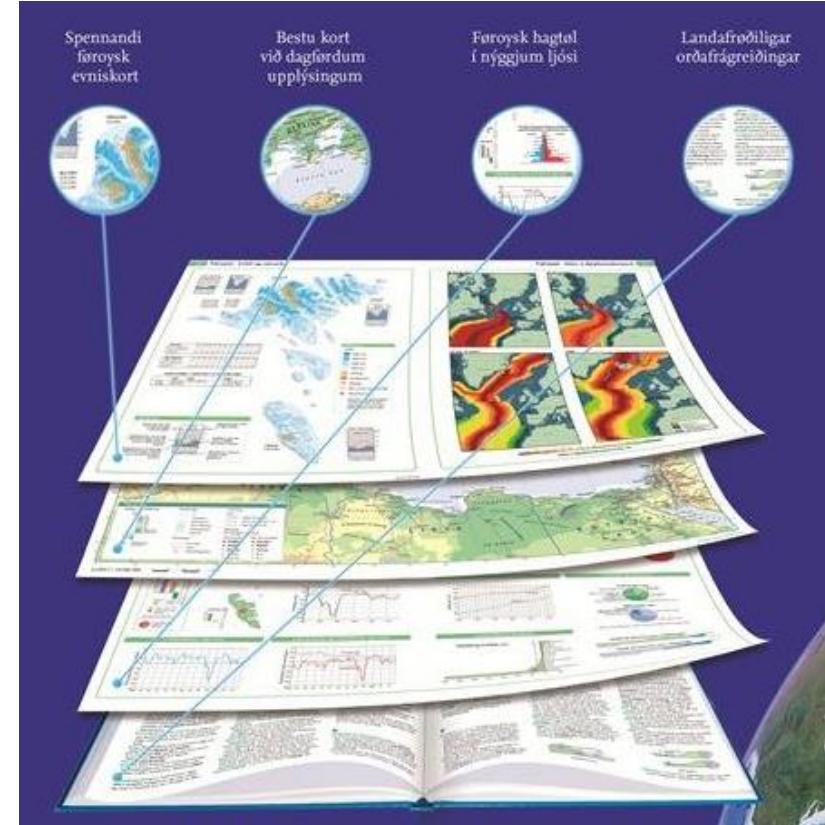
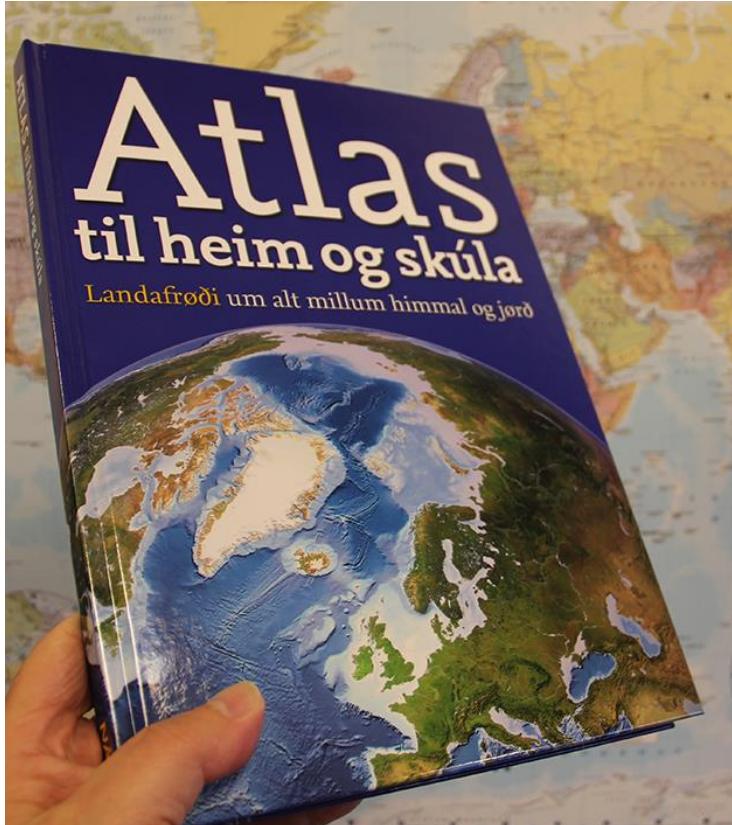
SARS-CoV-2
1 kromosom
29.900

Hvat er eitt genomatlas?



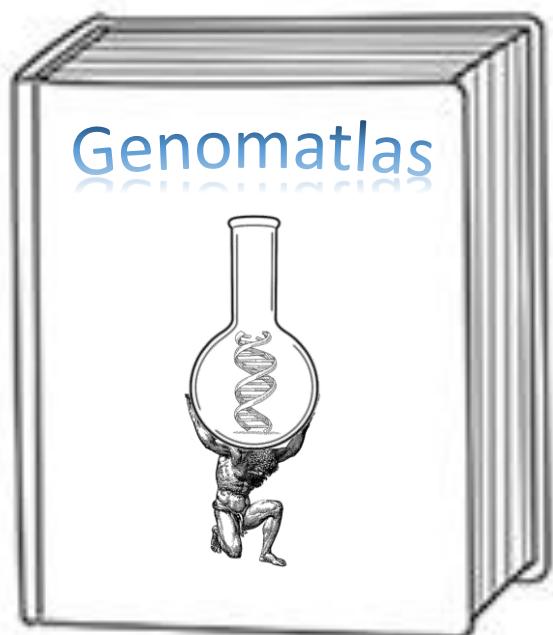
Hvat er eitt genomatlas?

- Eitt yvirlit yvir genom við kunning um, hvussu tey síggja út



Hvat er eitt genomatlas?

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The image shows four panels, each containing a photograph of an organism and a vertical sequence of DNA bases (nucleotides) below it. The organisms are a puffin, a fish, a silverfish, and a flower. The DNA sequences are color-coded by base: Adenine (green), Thymine (red), Cytosine (blue), and Guanine (yellow).

Organism	DNA Sequence
Puffin	ATCTCTTG TCATTAG GAACTGTC TGTTGCTT GGCCTGCC TCTCTTGG CAGCATCG CGATACTT CGGATCTC ACAACGGA CGGATCTC GATGAAGA
Fish	CTTGGCTC TTAGAGGA TGTAAAAA GCTTCGGC TGCCGTGG TTGGCTCC ATCGATGA ACTTCTGA TCTCTTGG CGGAATCTC TCTCTTGG AAGAACGC
Silverfish	CCAGCATC AAGTAAAA ACTTTTAA CGGCGCCC GCAGATCC CAGCATTG AAGAACGC AGTGTTC GCTCCAGC CTTGGCTC GCTCCAGC CAGCGAAA
Flower	AGAACGCA AACAAAGGT GATCTCTT GGTGCCCC GCCGGGCC GAACGCAG AACGCGAT AACTGTCA TGAAGAAC TCGATGAA TGAAGAAC TATGTAAT

Hvat er eitt genomatlas?

- Genomatlas fyri føroyska vistfrøði



Hvat kann eitt genomatlas brúkast til?



Hvat kann tað brúkast til?

- Eitt genomatlas er eitt grundarlag, sum nýggj gransking kann byggjast á.
 - Burðardygga veiðu
 - Kanna lívmargfeldi
 - Kanna uppruna hjá ymiskum dýrum
 - Og nógv annað

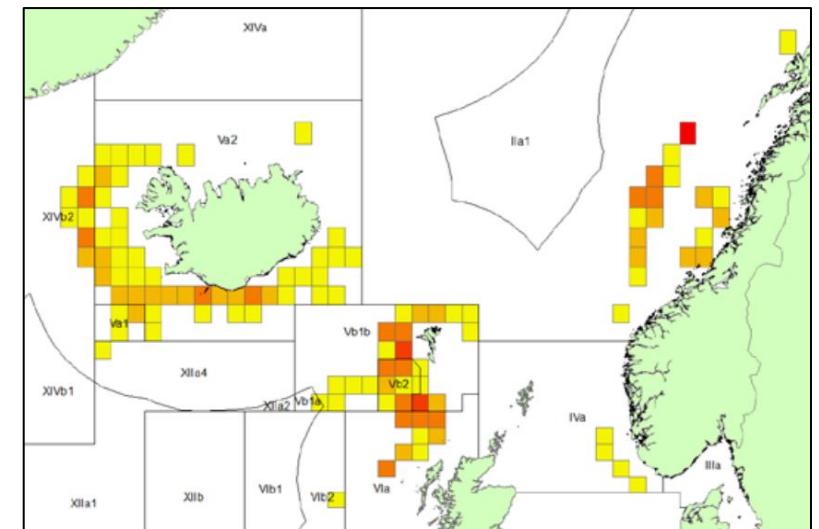


Dømi: Burðardygg veiða

- Kanna stovnsbygnaðin hjá gulllaksi
 - ICES
 - Fýra viðgerðarøki - Grundað á fiskiskap
 - Samsvarar hetta við lívfrøðina?
 - Vit kunnu brúka genomið hjá gulllaksi til at svara hesum spurninginum

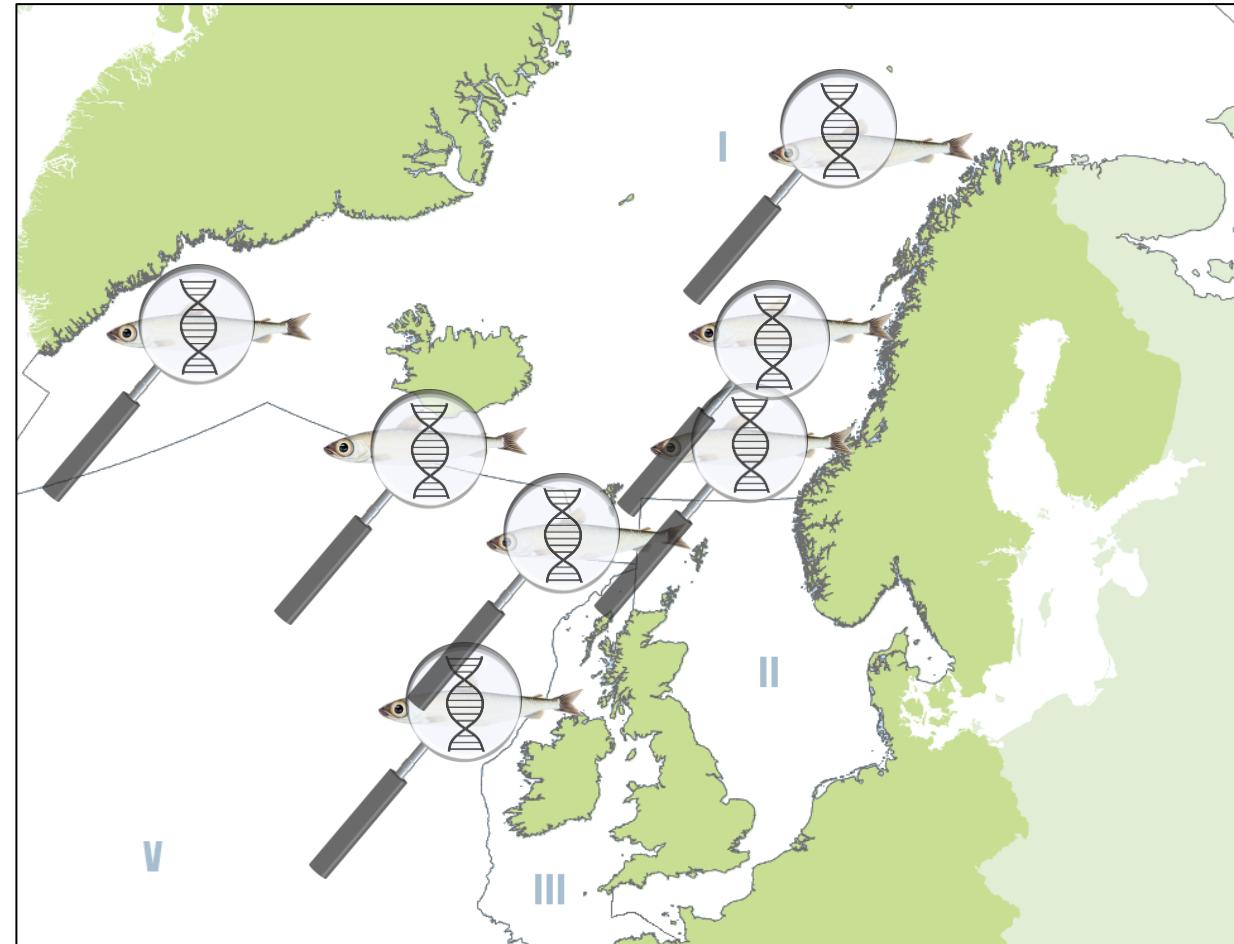


Argentina silus



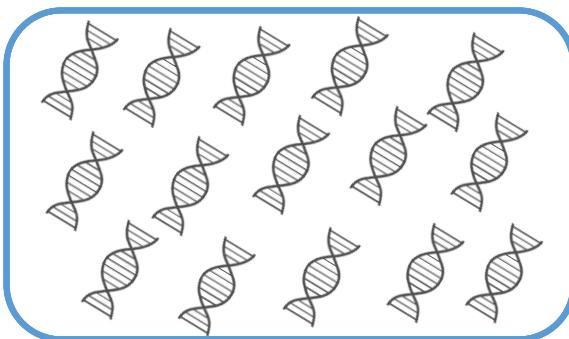
Dømi: Burðardygg veiða

- Kanna stovnsbygnaðin hjá gulllaksi



Dømi: Burðardygg veiða

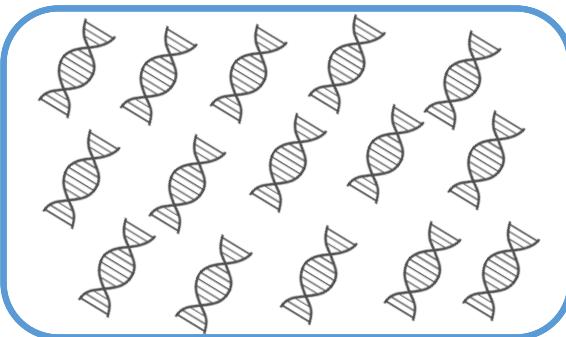
- Kanna stovnsbygnaðin hjá gulllaksi
 - Vit vita, hvussu genomið sær út
 - Skjótari, bíligari og neyvari kanningar
 - Møgulig úrslit:



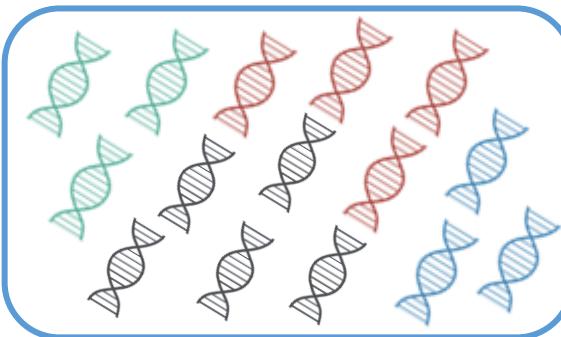
Alt DNA'ið líkist.
T.e. ein stovnur

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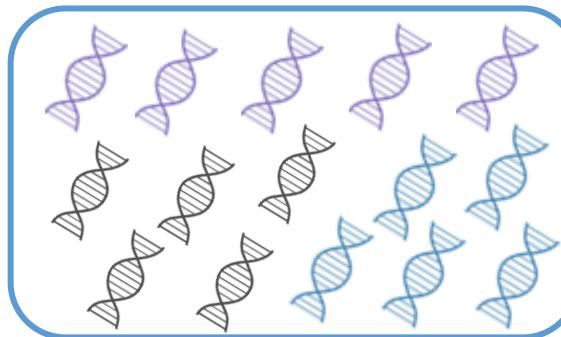
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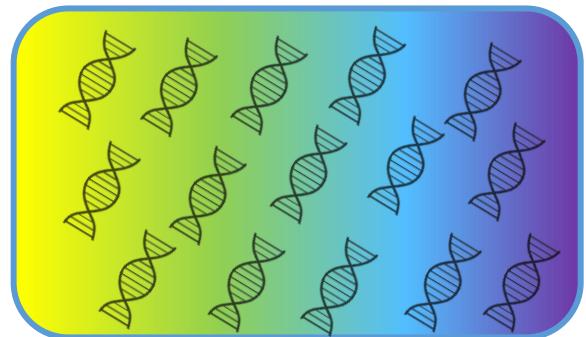
Alt DNA'ið líkist.
T.e. ein stovnur



DNA'ið vísir fýra stovnar,
sum ICES sigur



DNA'ið vísir tríggjar
stovnar.



Ella okkurt heilt annað.
Tveir, sjey ella 20 stovnar
?

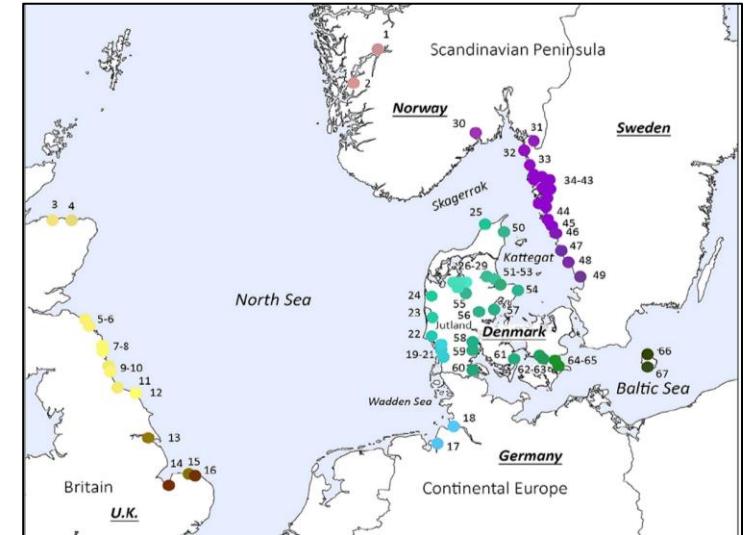
Dømi: Burðardygg veiða

- Úrslitini kunnu brúkast til at skipa gulllaksaveiðuna meira burðardygt
 - Vita hvussu nógvir stovnar eru
 - Kanna hvussu høgt veiðutrýst hvør stovnur tolir
 - Áseta kvotur grundaðar á lívfrøðina



Dømi: Arvafrøði og umhvørvi

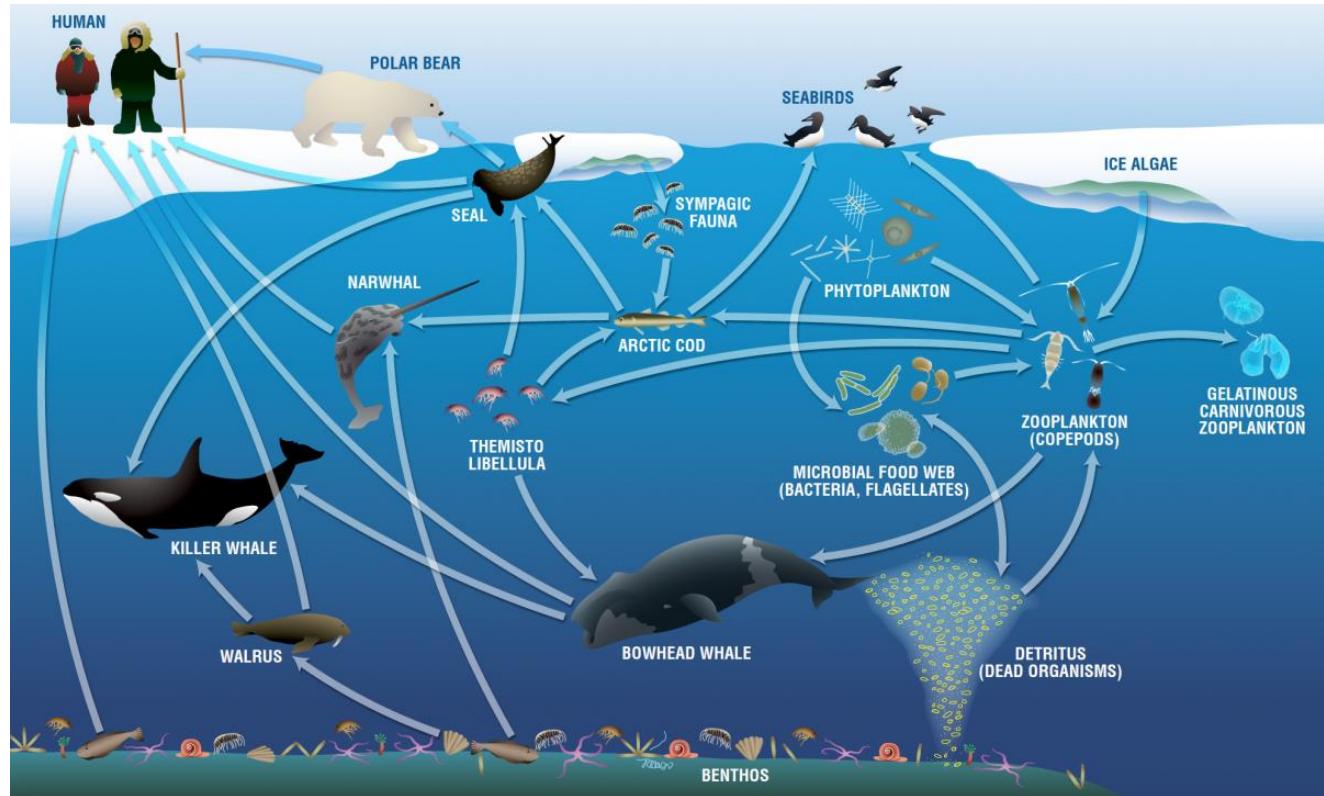
- Síl
 - Kanning gjord á DTU
 - Bekkevold et al. *Evolutionary applications* 13.2 (2020): 400-416.
 - DNA frá sílum úr ymiskum áum (ymisk umhvørvi)
 - Samanhing ímillum DNA og umhvørvi
 - Skipa fiskiskap
 - Tilbúgvingarætlan



Dømi: Kanna lívmargfeldi

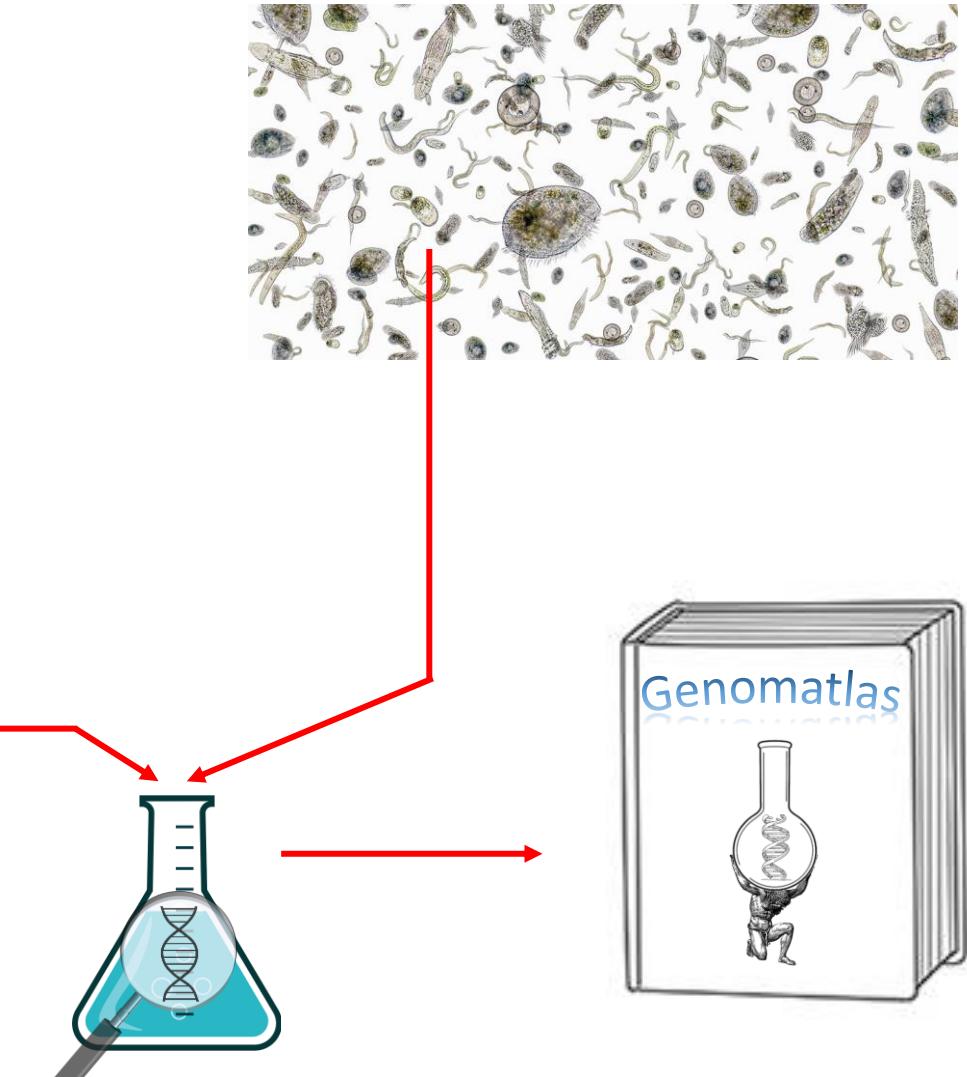
- Lívmargfeldi = Samanseting av öllum livandi verum í náttúruni

Hvør av øðrum
liva má



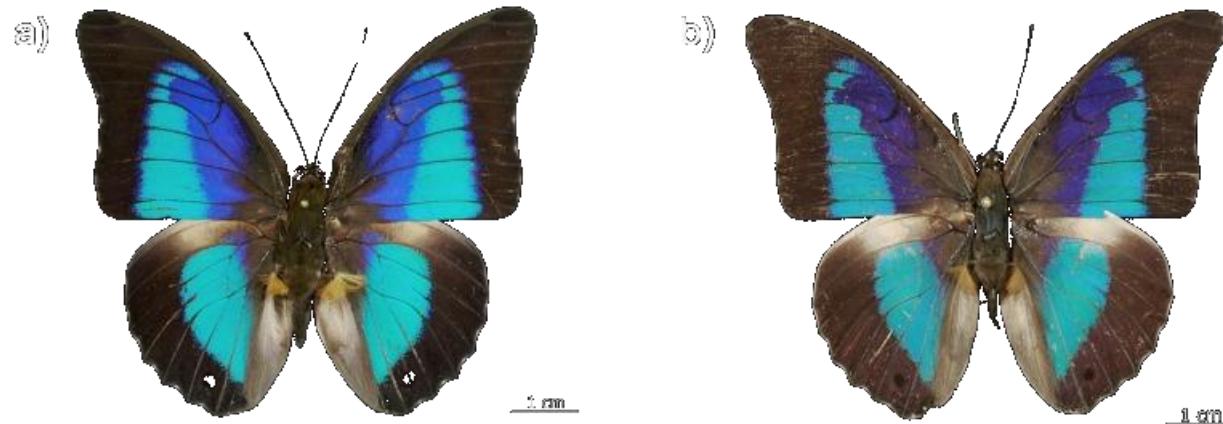
Dømi: Kanna lívmargfeldi

- Hvørji slög liva her?
 - Mikroorganismur
 - Havið
 - Umhvørvis DNA



Dømi: Kanna lívmargfeldi

- Kryptisk sløg

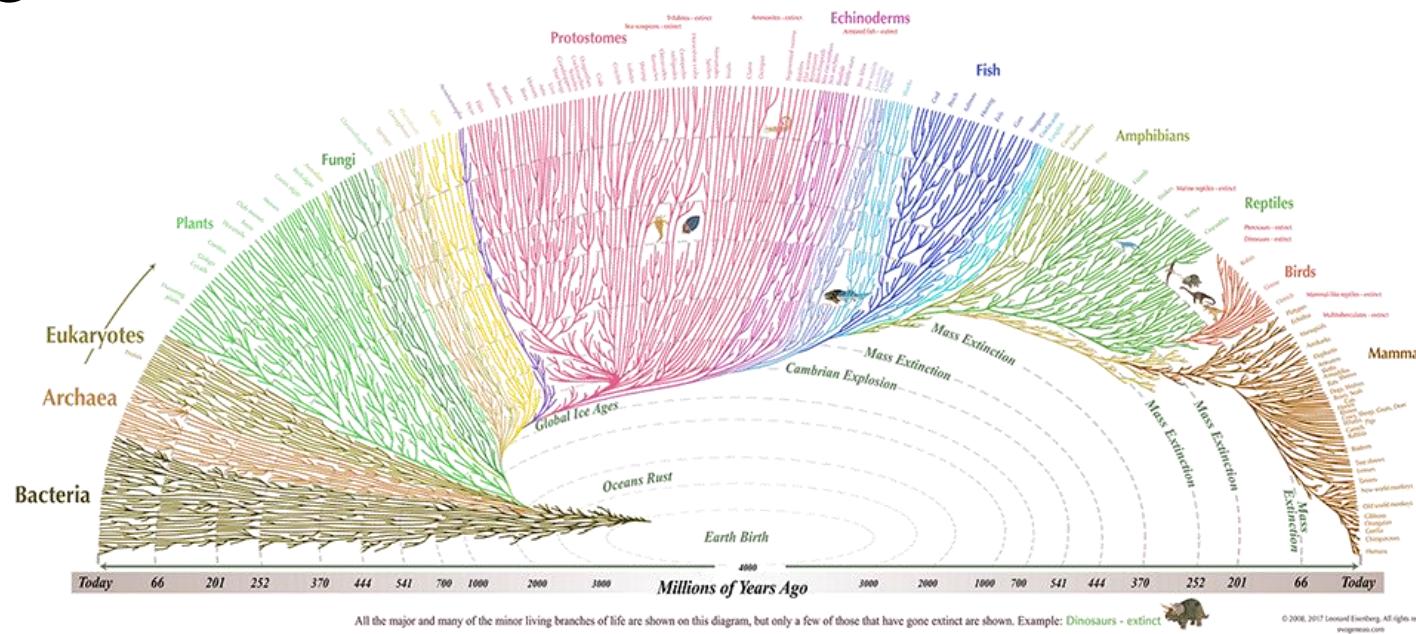


Prado, Blanca R., et al. *PLoS One* 6.11 (2011): e27776.



Ella okkurt heilt annað

- Lívmenning



- Finna áhugaverdar og hentar eginleikar í genominum
 - Heilsu
 - Framleiðslu

Samstarv:

Takk fyrir



><))))^o>

Stuðlar: