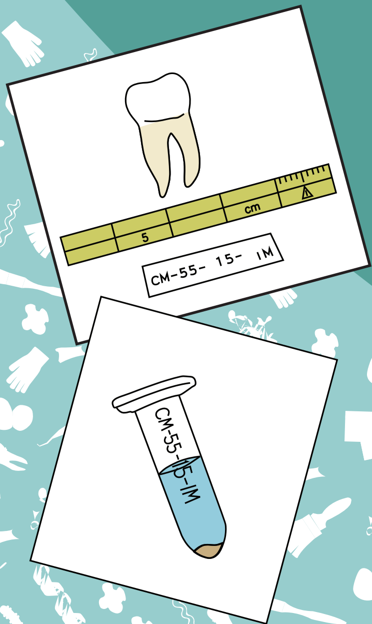
Njem nleghari anya nchọpụta na

SAYENSỊ NKA MMỤTA IHE ỌKPỤ

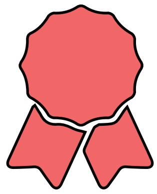


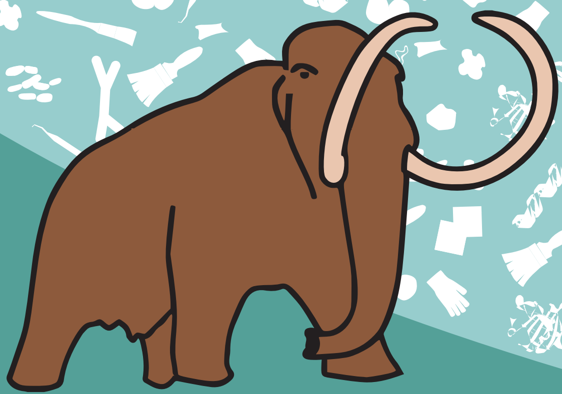
Akwụkwọ a bụ nke:

____

Aha

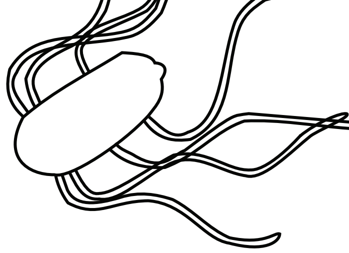
Ọzụzụ nke ndị ọka mmụta sayensị nka mmụta ihe ọkpụ n'ọdịnihu





Akwụkwọ ntinye àgbà nke sitere n'aka

Ụlọ akwụkwọ Max Planck maka Antrọpọlọjị ke Evolushọn



Njem nleghari anya nchọpụta na

SAYENSỊ NKA MMỤTA IHE ỌKPỤ

Akwụkwọ a bụ nke:

____

Aha

Ọzụzụ nke ndị ọka mmụta sayensị nka mmụta ihe ọkpụ n'ọdịnihu

Akwụkwọ ntinye àgbà nke sitere n'aka

Ulọ akwụkwọ Max Planck maka Antropoloji ke Evolushọn

Onye mbipụta: Ụlọ akwụkwọ Max Planck maka Antrọpọlọjị ke Evolushọn
Odezi: Christina Warinner
Odezi enyemaka: Jessica Hendy
Ndị ntinye aka:
Zandra Fagernäs
Jessica Hendy
Allison Mann
Åshild Vågene
Ke Wang
Christina Warinner

A tụgharịrị n'asụsụ Igbo site n'aka:
Ọkm. Chioma Vivian Ngonadi na Ọkn. Chukwuma Okeke

E bipụtara akwụkwọ ntinye agwa a dị ka mpaghara nke ọzụzụ n'ihe gbasara nkụzi na nkọwa sayensị.

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DOI: 10.17617/2.3483151
2023

Ndị anyị bụ

Ndị ọka mmụta sayensị gbasara amụmanụ ihe ọkpụ bụ ndị nchọcha na-eji ụzọ sayensị na usoro nchọcha ọgbara ọhụụ atụle ajụjụ banyere mmadụ n'oge gara aga.

N'ụlọ nnyocha ...

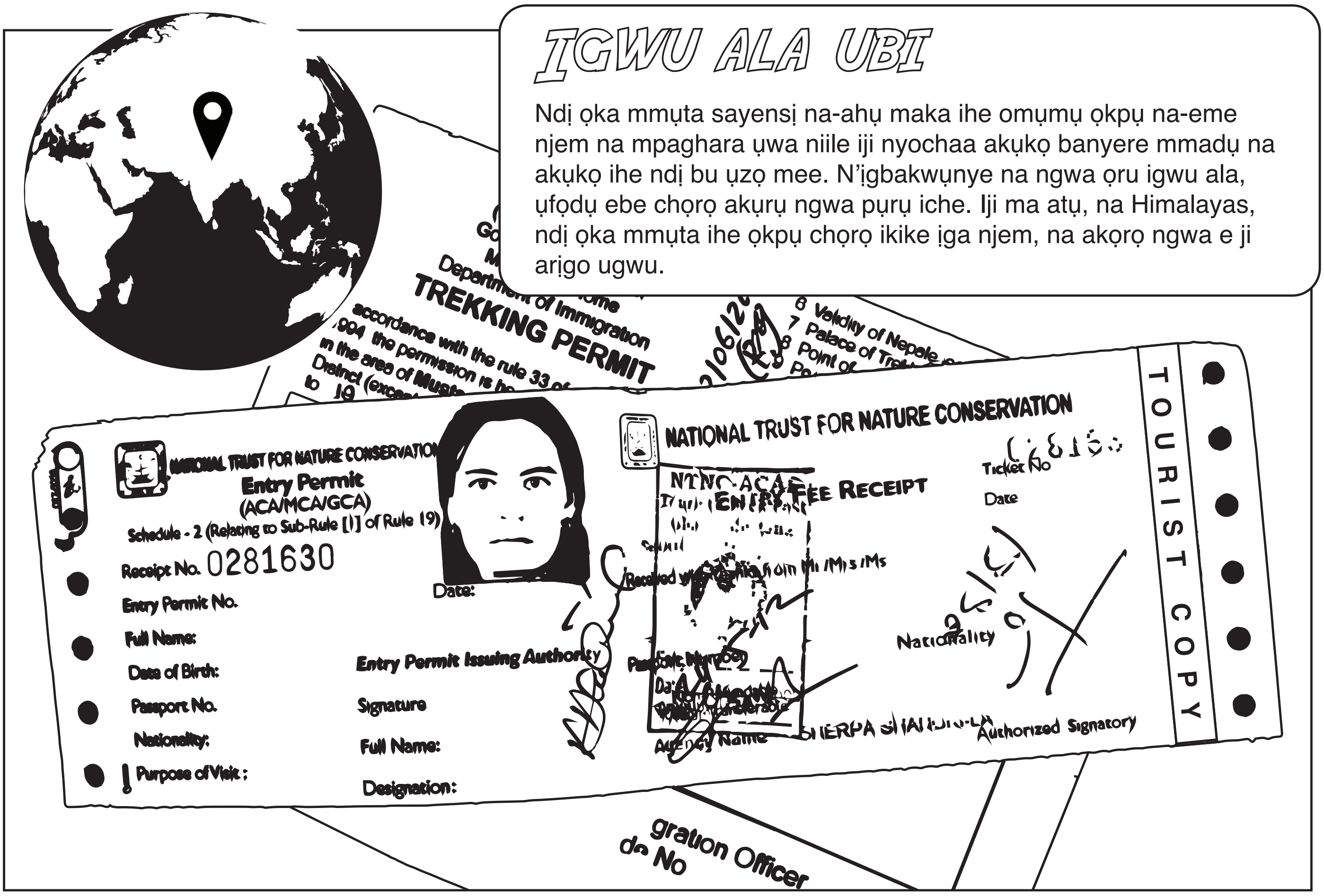
Mgbe ha na-ejikwa DNA ọkpụ, ndị ọka mmụta sayensị ga-arụ ọrụ n' ime ụlọ dị ọcha ma yirikwa koot, gbara gloov na buut pụrụ iche iji chekwaa ihe atụ ọkpụ ka ọ ghara inwe mmetọ nke DNA ọgbara ọhụụ.

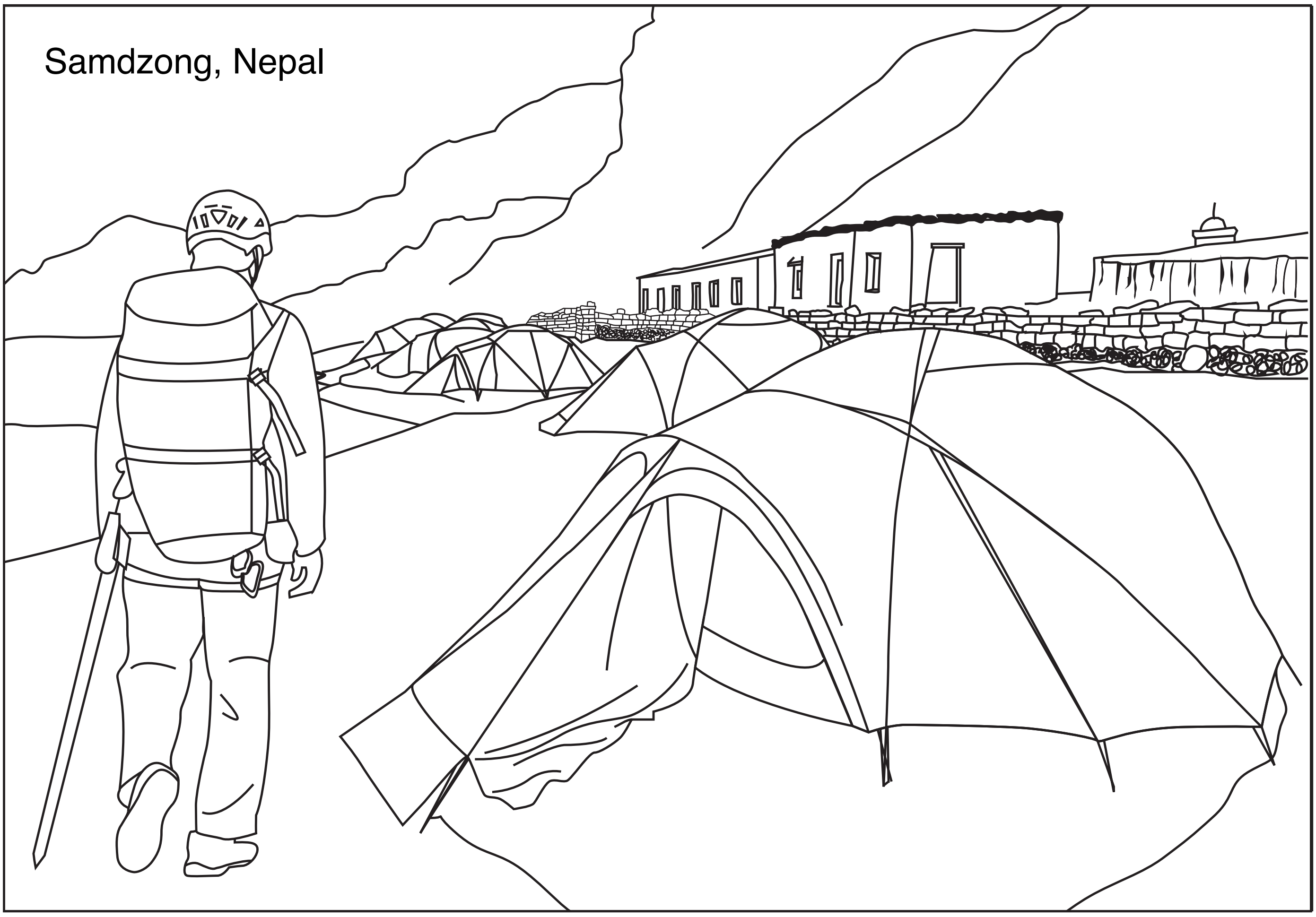
Ndị ọka mmụta sayensị na-eji ngwa na akụrụ ngwa dịgasị iche iche iji mụọ ihe atụ ọkpụ.

N'ubi ...

Ndị ọka mmụta sayensị na ndị ọka mmụta ihe ọkpụ na-arụkọ ọrụ ọnụ iji gwupụta ma kpokọta ihe ngosi n'ịga n'ihu maka ọmụmụ ihe ndị ọzọ na laab.

Nke a nwere ike ịgụnye olili ozu, ịnakọta ihe fọdụrụ na ite agwa ọkpụ, ịchọpụta ọkpụkpụ anụmanụ dị n'etiti (olulu mkpofu) ma ọ bụ ịzata sediment maka osisi rere ure.


IGWU ALA UBI
Ndị ọka mmụta sayensị na-ahụ maka ihe omụmụ ọkpụ na-eme njem na mpaghara ụwa niile iji nyochaa akụkọ banyere mmadụ na akụkọ ihe ndị bu ụzọ mee. N'ịgbakwụnye na ngwa ọrụ igwu ala, ụfọdụ ebe chọrọ akụrụ ngwa pụrụ iche. Iji ma atụ, na Himalayas, ndị ọka mmụta ihe ọkpụ chọrọ ikike ịga njem, na akọrọ ngwa e ji arịgo ugwu.
Department of Immigration
TREKKING PERMIT
NATIONAL TRUST FOR NATURE CONSERVATION
Entry Permit
(ACA/MCA/GCA)
Receipt No. 0281630
Entry Permit No.
Full Name:
Date of Birth:
Passport No.
Nationality:
Purpose of Visit :
Entry Permit Issuing Authority
Signature
Full Name:
Designation:
NATIONAL TRUST FOR NATURE CONSERVATION
Entry Fee Receipt
Ticket No
Date
Nationality
Authorized Signatory
TOURIST COPY
gration Officer

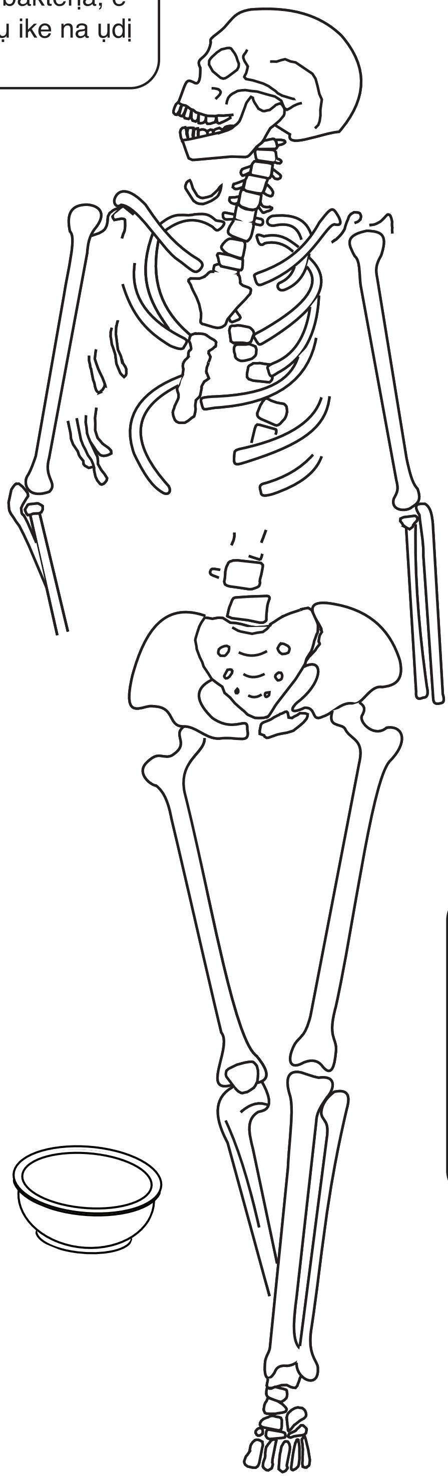

Samdzong, Nepal

Ḿkpụ́kọ̀ n’eze

A makwa ya dị ka ọrụkpụrụ eze, mkpụkọ n’eze bụ naanị akụkụ ahụ gị nke na-anaghị eto eto ma ọ bụ gbanwee mgbe ị dị ndụ. Ọ na-ejide nri na nje bakterịa, e nwere ike iji ya hazigharịa ahụ ike na ụdị nri mmadụ na-eri.

Ọkpụkpụ na Eze

Ọkpụkpụ na eze nwere iberibe DNA, bụ ndị e nwere ike iji chọpụta etu ndị mmadụ n’oge ochie si pụọ n’obodo ma kpughee agwa ha ndị dị ka ntutu isi agba anya, nakwa mgbanwe mkpụrụ ndụ ihe nketa. Eze ndị nwụrụ n’oge ọrịa na-efe efe nwekwara ike inwe nje ndị butere ha.



Ọkpụkpụ anụmanụ

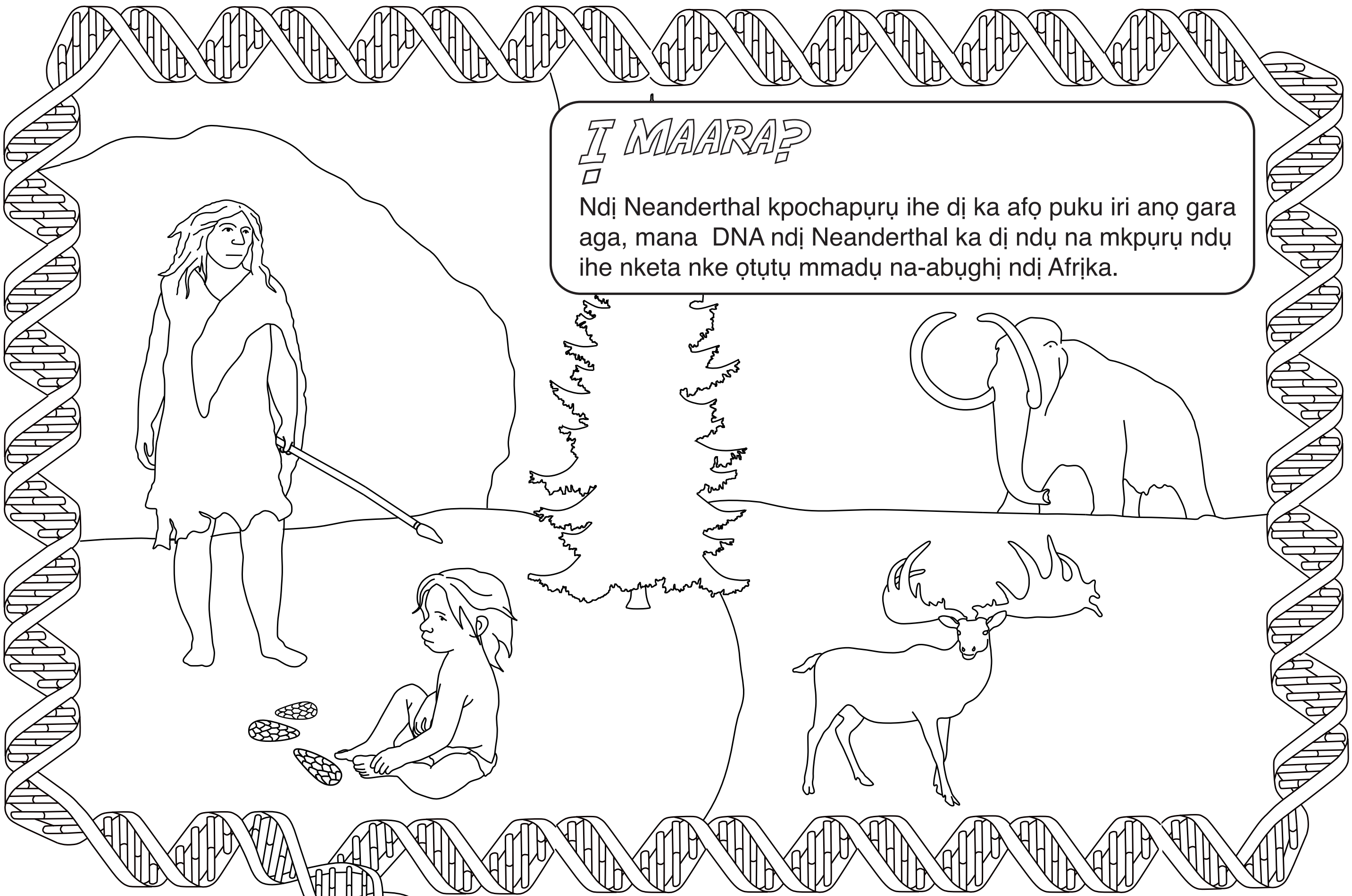
Ọkpụkpụ anụmanụ nwere ike ịkụziri anyị gbasara nri na akụnụba obodo ndị gara aga. Ha na-abakwa uru n’igosipụta afọ ole ihe nwere ike ịdị ya na iwughari gburugburu ebe ọkpụ.

Ite ụrọ fọdụrụ

Azụ nri na ihe ndị ọzọ fọdụrụ n’akpụmite nwere ike inwe ńrí āhụ̄ nke sitere n’osisi na nke sitere n’anụmanụ, ụmụ irighiri ihe ọkụkụ anaghị ahụ anya, na mpụta ihe abụbụ e ji esi nri abụba. Ntụle ihe ndị fọdụrụ n’ite ụrọ pụrụ ịkụziri anyị banyere ụdị nri na nri dị iche iche ndị mmadụ riri n’oge ochie.

IHE ANYỊ NA-AMỤ

Ndị ọka mmụta sayensị amụmamụ ihe ọkpụ na-eji ụzọ sayensị na nka na ụzụ ọgbara ohụụ amụ banyere ajụjụ ihe ndị mere n’oge gara aga. Site na ngwa ọrụ kwesịrị ekwesị, a pụrụ ịmụta ọtụtụ ihe site na obere ihe atụ, dị ka ọkpụkpụ, eze, ma ọ bụ ite.

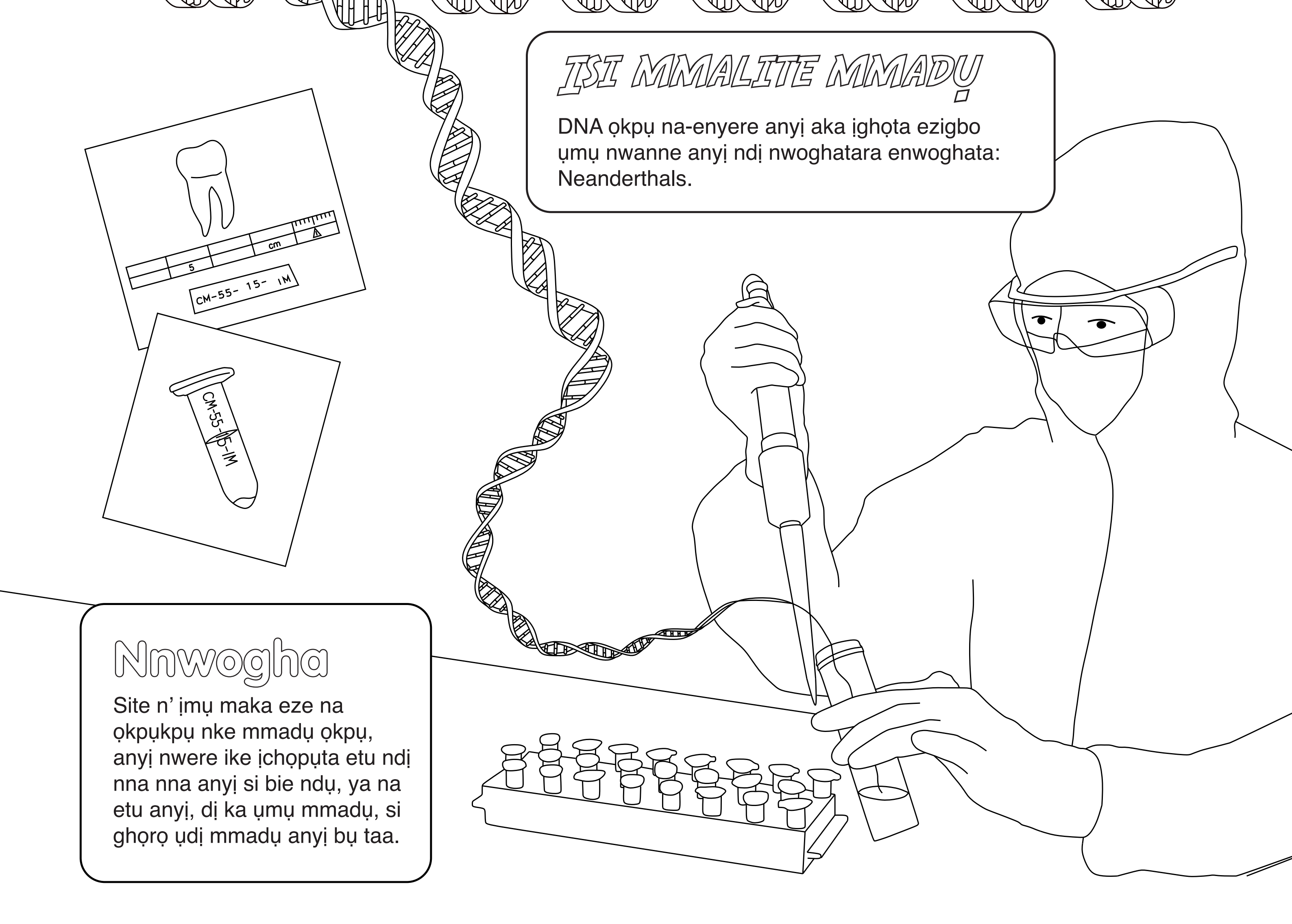


Ị MAARA?

Ndị Neanderthal kpochapụrụ ihe dị ka afọ puku iri anọ gara aga, mana DNA ndị Neanderthal ka dị ndụ na mkpụrụ ndụ ihe nketa nke ọtụtụ mmadụ na-abụghị ndị Afrịka.

ỊSI MMALITE MMADỤ

DNA ọkpụ na-enyere anyị aka ịghọta ezigbo ụmụ nwanne anyị ndị nwoghatara enwoghata: Neanderthals.



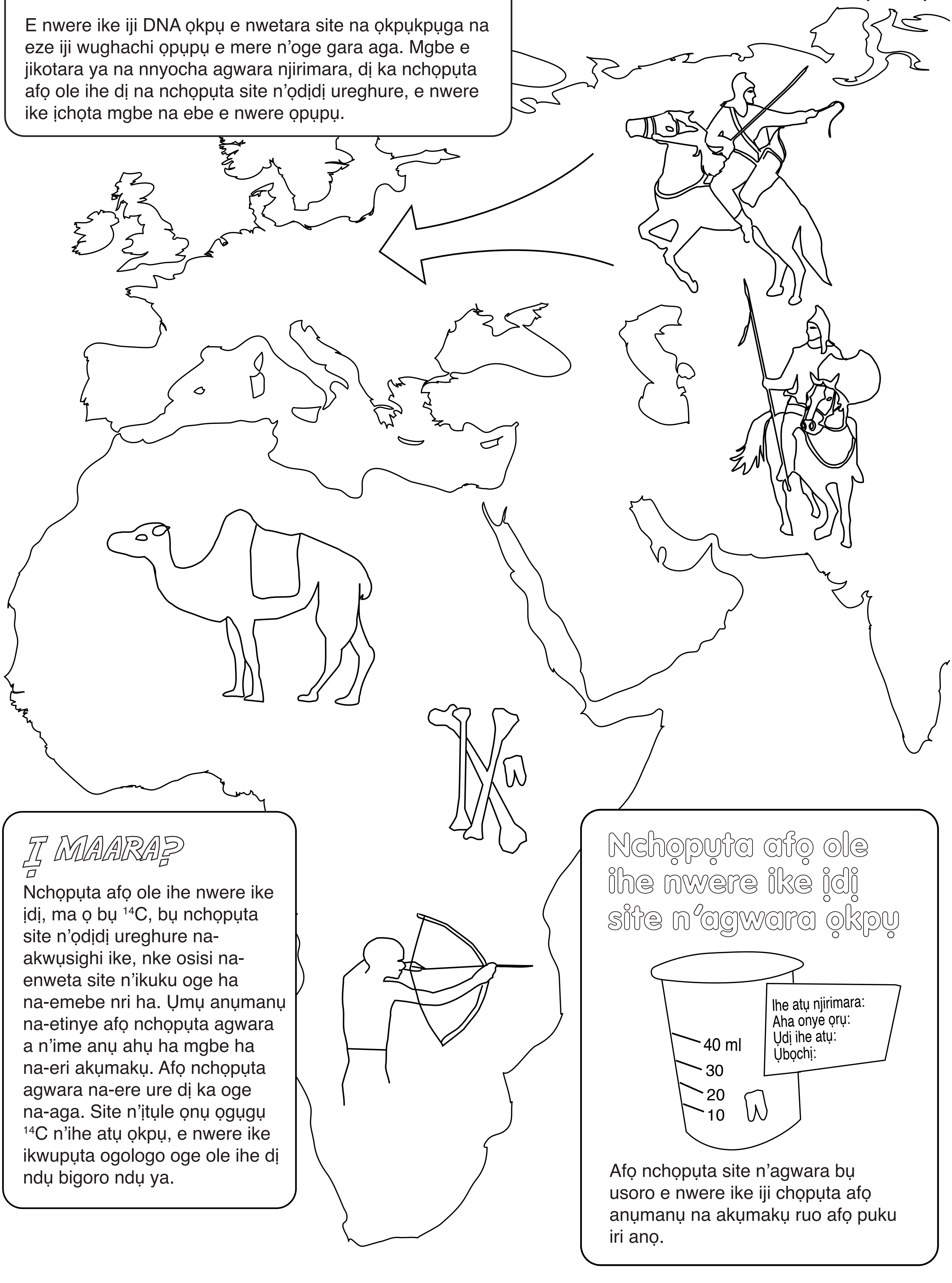
Nnwogha

Site n' ịmụ maka eze na ọkpụkpụ nke mmadụ ọkpụ, anyị nwere ike ịchọpụta etu ndị nna nna anyị si bie ndụ, ya na etu anyị, dị ka ụmụ mmadụ, si ghọrọ ụdị mmadụ anyị bụ taa.

ỌPỤPỤ NDỊ OCHIE

E nwere ike iji DNA ọkpụ e nwetara site na ọkpụkpụga na eze iji wughachi ọpụpụ e mere n’oge gara aga. Mgbe e jikotara ya na nnyocha agwara njirimara, dị ka nchọpụta afọ ole ihe dị na nchọpụta site n’ọdịdị ureghure, e nwere ike ịchọta mgbe na ebe e nwere ọpụpụ.

Ndị Scythians, n’etiti Eshịa
Oge ọkpụtọrọkpụ, afọ 700 tupu
Kraịst abịa

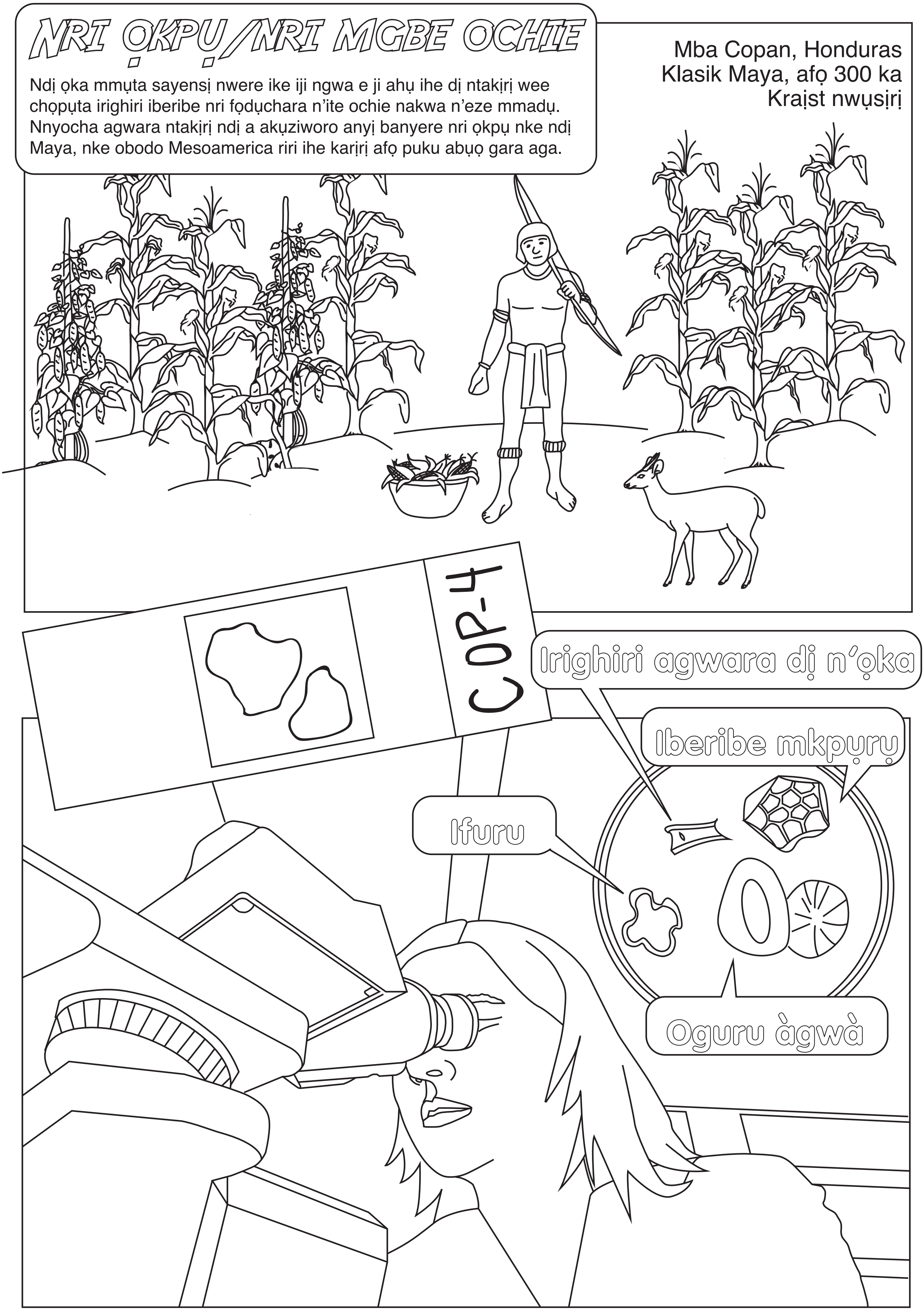


Ị MAARA?

Nchọpụta afọ ole ihe nwere ike ịdị, ma ọ bụ ^{14}C, bụ nchọpụta site n’ọdịdị ureghure na-akwụsighi ike, nke osisi na-enweta site n’ikuku oge ha na-emebe nri ha. Ụmụ anụmanụ na-etinye afọ nchọpụta agwara a n’ime anụ ahụ ha mgbe ha na-eri akụmakụ. Afọ nchọpụta agwara na-ere ure dị ka oge na-aga. Site n’ịtụle ọnụ ọgụgụ ^{14}C n’ihe atụ ọkpụ, e nwere ike ikwupụta ogologo oge ole ihe dị ndụ bigoro ndụ ya.

Nchọpụta afọ ole ihe nwere ike ịdị site n’agwara ọkpụ

Afọ nchọpụta site n’agwara bụ usoro e nwere ike iji chọpụta afọ anụmanụ na akụmakụ ruo afọ puku iri anọ.

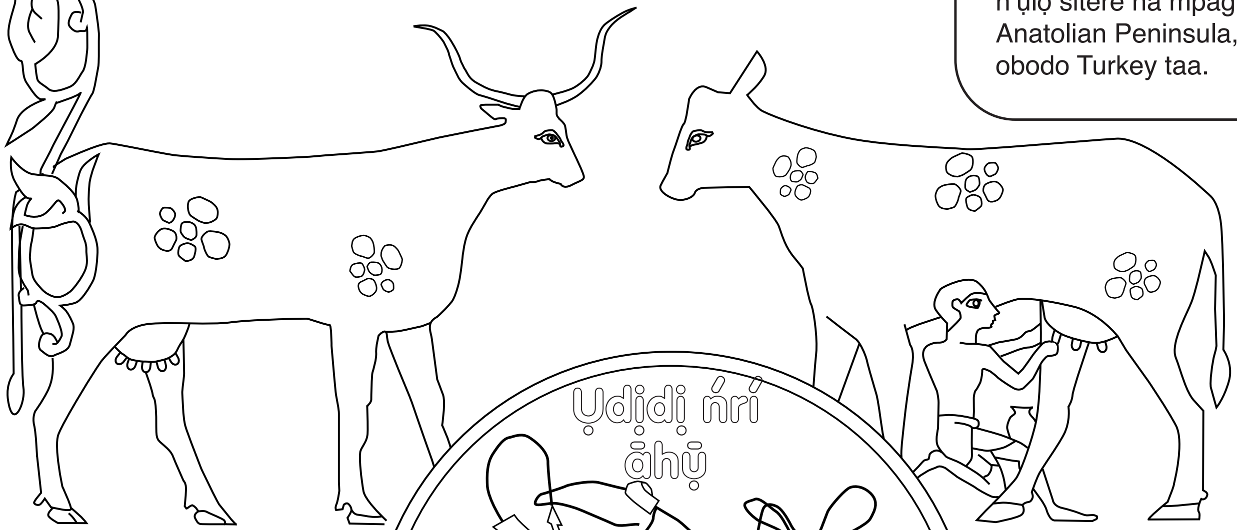

NRI ỌKPỤ/NRI MGBE OCHIE
Ndị ọka mmụta sayensị nwere ike iji ngwa e ji ahụ ihe dị ntakịrị wee chọpụta irighiri iberibe nri fọdụchara n'ite ochie nakwa n'eze mmadụ. Nnyocha agwara ntakịrị ndị a akụziworo anyị banyere nri ọkpụ nke ndị Maya, nke obodo Mesoamerica riri ihe karịrị afọ puku abụọ gara aga.
Mba Copan, Honduras Klasik Maya, afọ 300 ka Kraịst nwụsịrị
COP-4
Irighiri agwara dị n'ọka
Iberibe mkpụrụ
Ifuru
Oguru àgwà

USORO IDOWE/ỊKPA ANỤ N’ỤLỌ

N’ihe karịrị afọ puku iri, ụmụ mmadụ na-ahọrọ, na-akụ ụdị osisi ma na-akpakwa anụmanụ dị iche iche ndị nwere otu agwara. Ehi bụ otu n’ime anụ mbụ a na-eri eri a kpara n’ụlọ. Ndị gboo jikwa ha mere anụmanụ e ji adọkpụ ibu. Ha jikwa ya enweta anụ, mmiri ara na akpụkpọ.

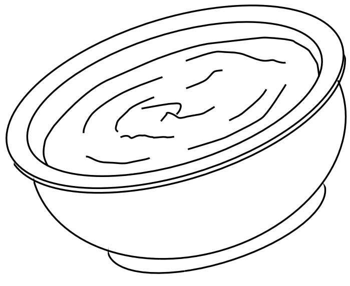
Ị MAARA?

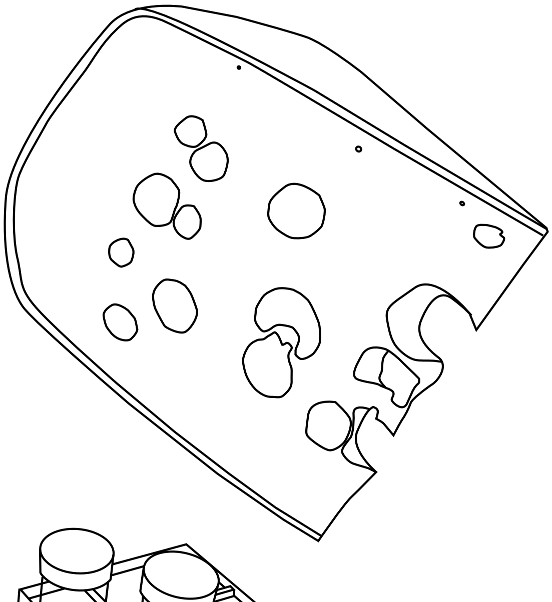
Ehi mbụ a kpara n’ulo sitere n’agbụrụ ehi ọkpụ Orọks. Ọ bụ nnukwu ehi ọhịa e kpochapụworo. Mpụta ihe mbụ gbasara ehi a na-akpa n’ụlọ sitere na mpaghara Anatolian Peninsula, nke bụ obodo Turkey taa.

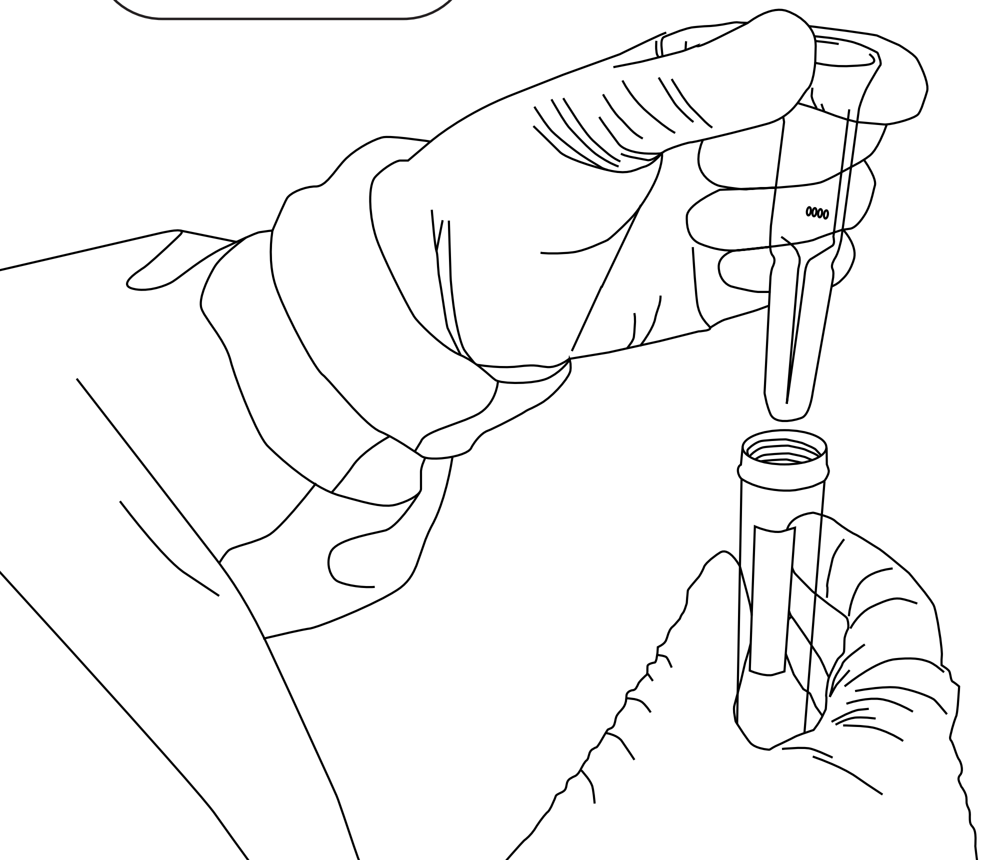


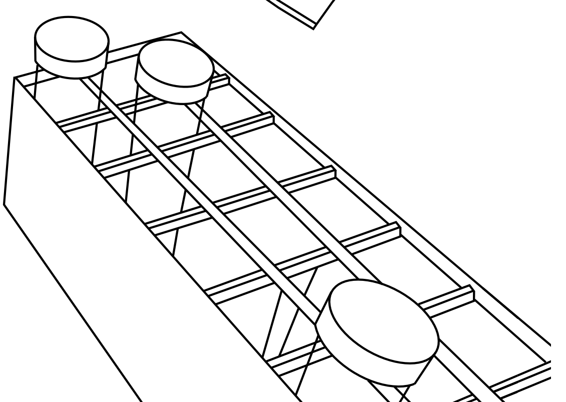
Mmalite mmiri ara ehi

Amachaghị banyere mmalite mmiri ara ehi, mana ndị ọka mmụta sayensị amụmanụ ihe ọkpụ na-eji usoro a na-akpọ mass spektrometri iji chọpụta nri ahụ mmiri ara ehi na eze ọkpụ, ma si etu ahụ wughachị akụkọ mmalite mmiri ara ehi.



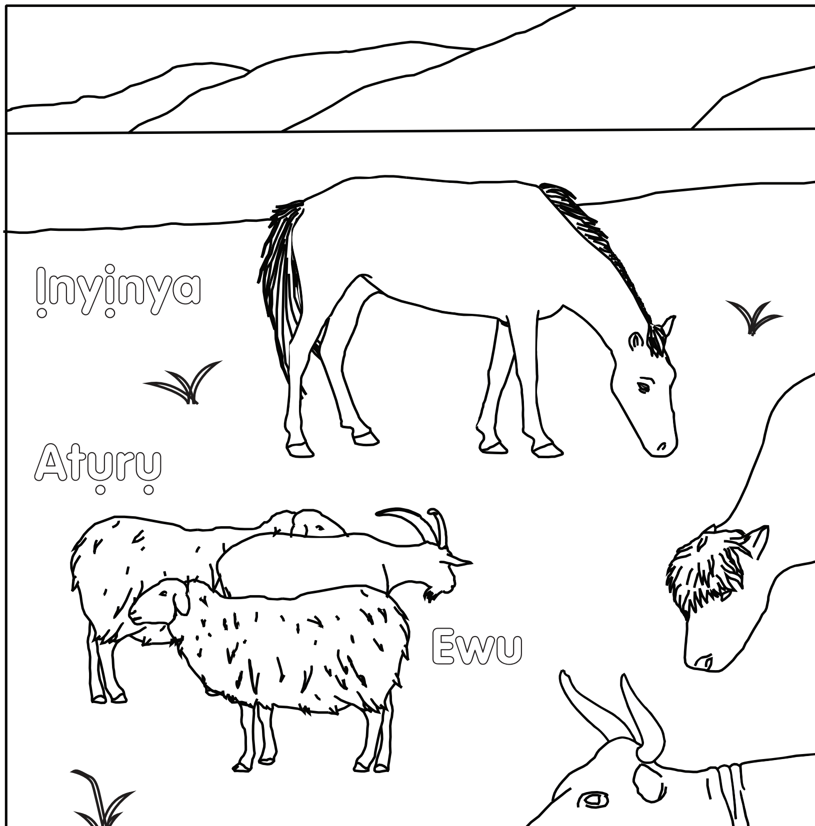






Mongolia

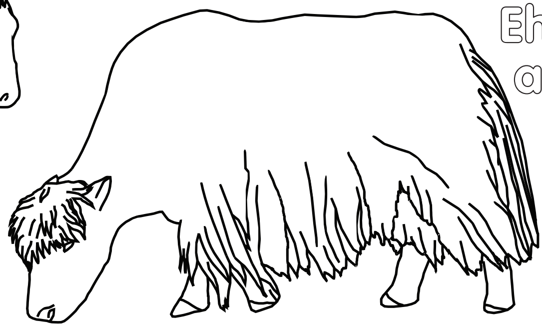
Ụdị anụmanụ dị iche iche na-ebi n'ahịhịa nke mbara ala Mongolia ndị gụnyere ịnyịnya, ehi, ehi agada mpi, atụrụ, ewu, mgbada na anyịnya ibu. Ndị na-achị ehi na-enweta ihe dị iche iche e si na mmiri ara ehi emepụta site na mmiri ara anụmanụ ndị a.



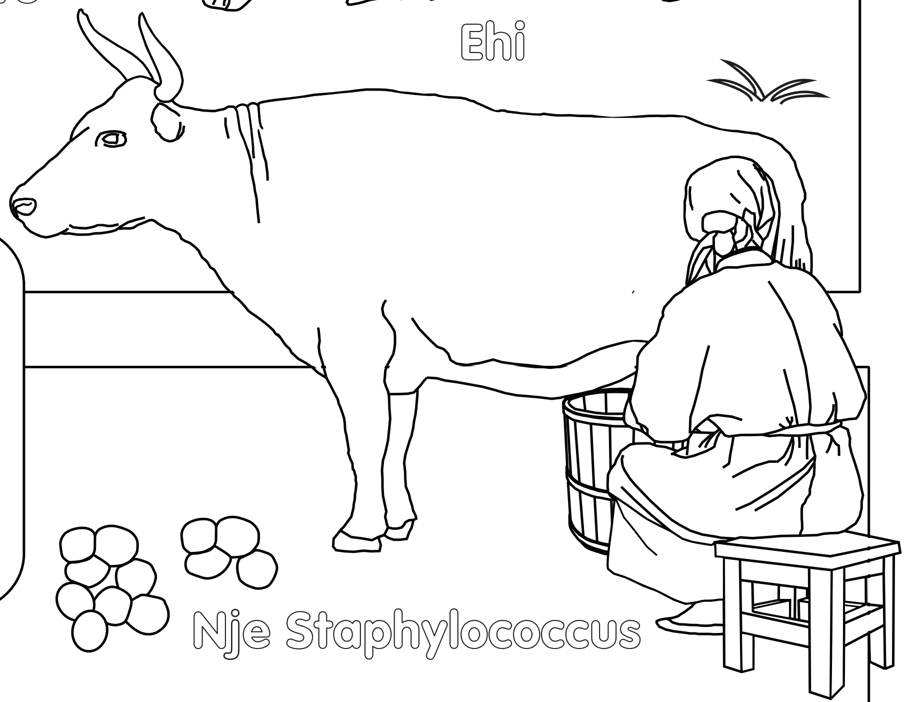
Ịnyịnya

Atụrụ

Ewu



Ehi agada mpi

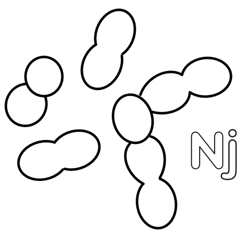


Ehi

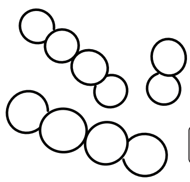
NRI SITERE NA MMIRI ARA EHI

Nri sitere na mmiri ara ehi bụ mpaghara dị oke mkpa na ndụ kwa ụbọchị nke ndị Mongolia. Site na nchọcha amụmamụ ihe ọkpụ, anyị maara na ọdịnala adịlarị ruo ihe dị ka o peka mpe afọ puku atọ na narị ise gara aga.

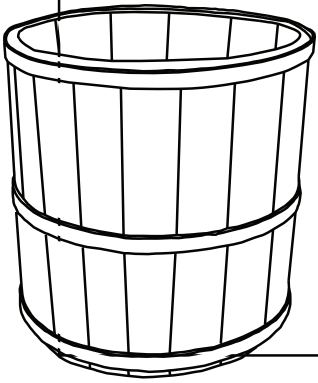
Nje Staphylococcus



Nje Leuconostoc

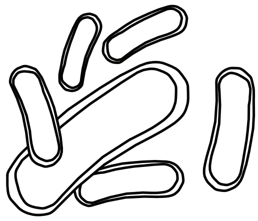


Nje Lactococcus



Ụmụ nje ndị sitere na mmiri ara ehi

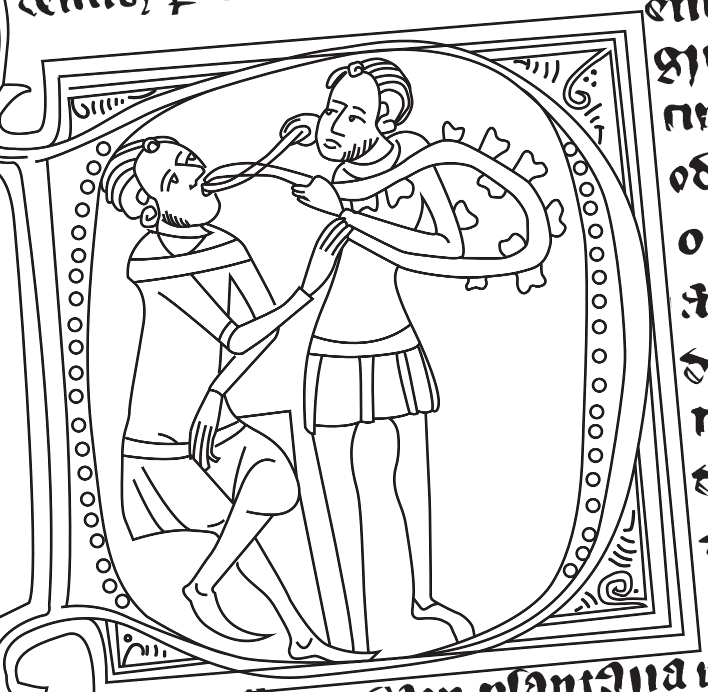
Irighiri nje - karịsịa nje bakterịa na nke yist - ha na-arụ ọrụ dị mkpa n'imepụta ụdị nri dị iche iche sitere na mmiri ara ehi anyị maara, dị ka yogọọt, bótà, na chiiz, ya na nri ndị amachaghị nke ọma dị ka aaruul ndị Mongolịa (ụtụ ọka a mịrị amị) airag (biya mmiri ara ịnyịnya).

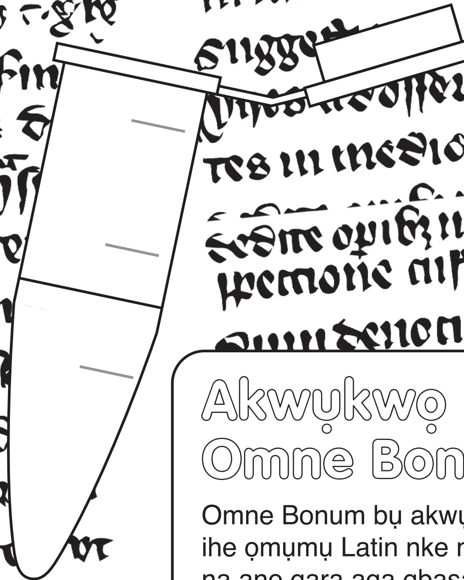


Nje Lactobacillus

Ọrịa ọkpụ dị iche iche

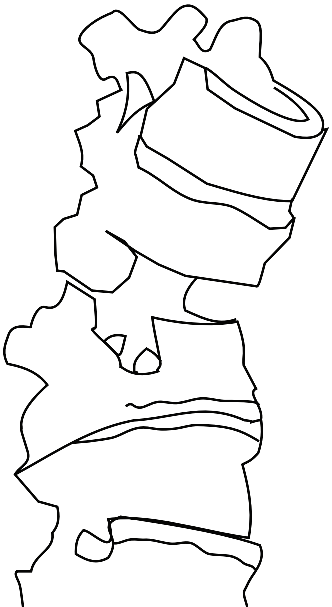
Ọkpụkpụ, eze na ọrụkpụrụ eze na-echekwa ozi dị mkpa banyere ahụ ike ndị mgbe ochie. Iji ma atụ, DNA na nri ahụ ndị e chekwara na ọrụkpụrụ eze na-enyere ndị ọka mmụta sayensị aka ịghọta akụkọ banyere ọrịa igbiri na eze ure.





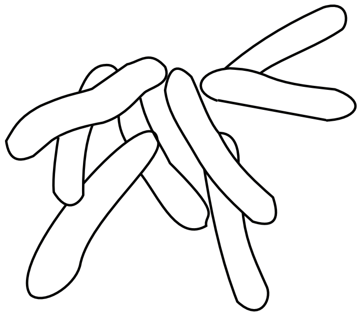
Akwụkwọ Omne Bonum

Omne Bonum bụ akwụkwọ nka ihe ọmụmụ Latin nke nari afọ iri na anọ gara aga gbasara ndụ n'agba etiti ndị Jurop, nke dị n'ọba akwụkwọ ndị Britain. Ọ gụnyere ihe ndepụta banyere eze na nlekọta ahụ ike ndị na-enyere anyị aka ịkọwa ahụ ike na ọrịa ọkpụ.

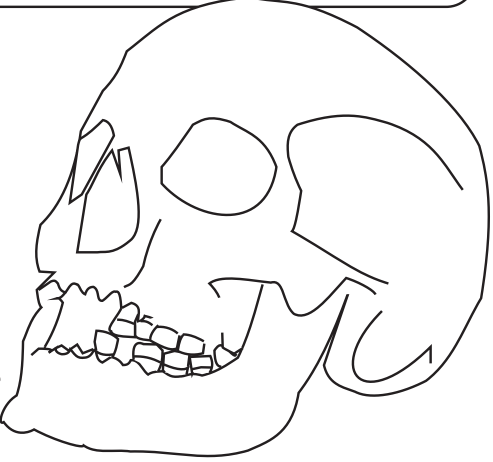


ỤKWARA NTA NA EKPENTA

Nje bakterịa na-ebute ụkwara nta na ekpenta yitere onwe ha: Ha bụ nje *Mycobacterium tuberculosis* na *Mycobacterium leprae*. Ha abụọ nwere ike ibufe ọkpụkpụ ọrịa. Uhiri DNA ndị fọdụrụ n'ọkpụkpụ na-enyere ndị ọka mmụta sayensị aka iwughachi akụkọ banyere ọrịa ọkpụ ndị a.

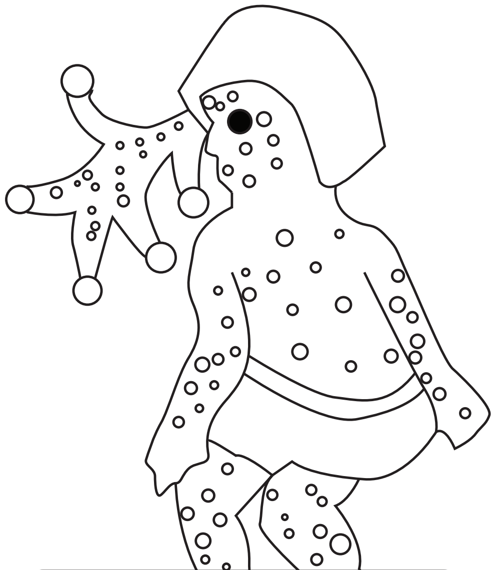


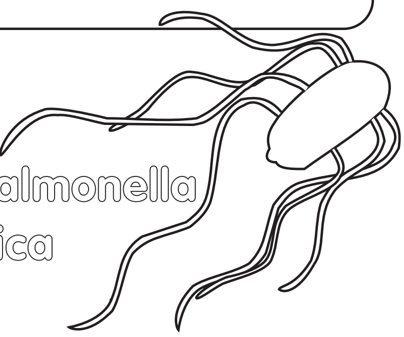
Nje Mycobacterium leprae



NJE COCOLIZTLI

Ọrịa na-efe efe nke achọputabeghị, nke ndị Aztec kpọrọ Cocoliztli, egbuola pasentị mmadụ iri isii ruo iri iteghete ndị bi na Mexico n'agbata AD 1545 na 1550. Na nso nso a, DNA sitere na nje *Salmonella enterica* Paratyphi C, bụ nke a hụrụ n'ime eze ndị ọrịa ndị a na-efe efe wakporo.





Nje Salmonella enterica

Ọkm. Schnabel

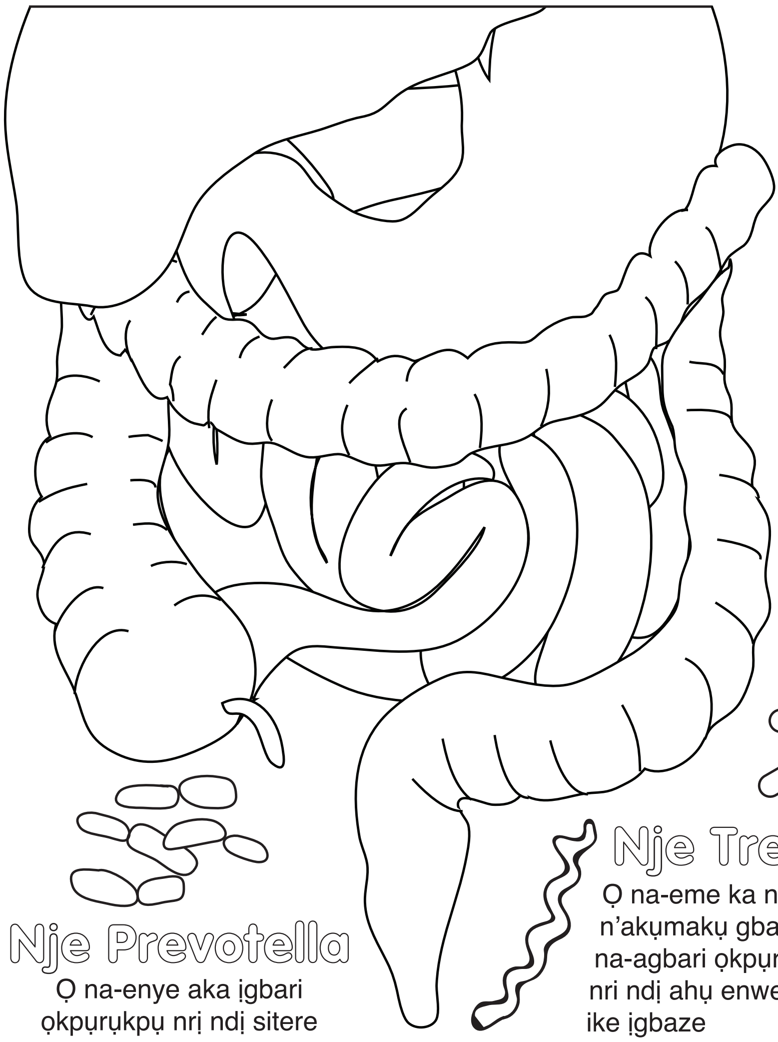
Ndị dọkịta na-agwọ ndị ọrịa na-efe efe wakporo na senchuri iri na asaa yicha ihe mkpuchi ihu dịcha ka nnụnụ iji chebe ha ikuru "ikuku ọjọọ".

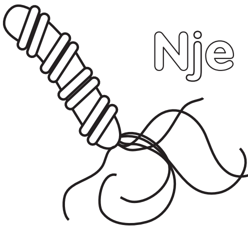
Nje Codex en Cruz

Ya bụ akwụkwọ ndị Aztec malitere na 1550, na-eziputa akara ngosi nke Cocoliztli: ahụ ọkụ, ihe nghakasị n'ahụ nakwa nnukwu ọgbụgba ọbara.

ỌRỊA NA-EFE EFE

Ihe na-ebute ọrịa na-efe efe bụ bakterum *Yersinia pestis*, nke na-agbasa site n'ibunye àkpị ndị bicha n'ahụ oke ọrịa. Ụmụ mmadụ àkpị ndị a tara na-ebute ọrịa bubonik. Ihe otuto a bụ ihe kpatara Ọnwụ Ojii (AD 1346-1353) nke gburu ọkara ndị Jurop.





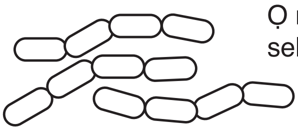
Nje Helicobacter pylori

Ọ na-ebi n'ime afọ ma nwee ike ibute ọnya afọ na ụfọdụ ọrịa kansa

Nje Bifidobacterium

Ọ na-enyere ụmụ a mụrụ ọhụụ aka ịgbari mmiri ara

Nje Faecalibacterium



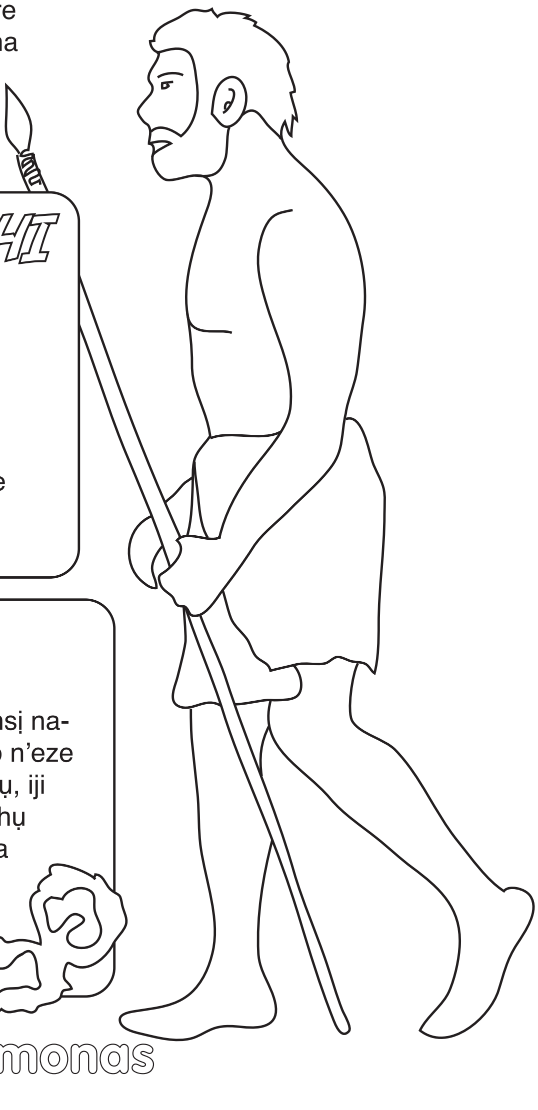
Ọ na-emepụta nri maka sel eriri afọ

Nje Prevotella

Ọ na-enye aka ịgbari ọkpụrụkpụ nri ndị sitere n'akụmakụ

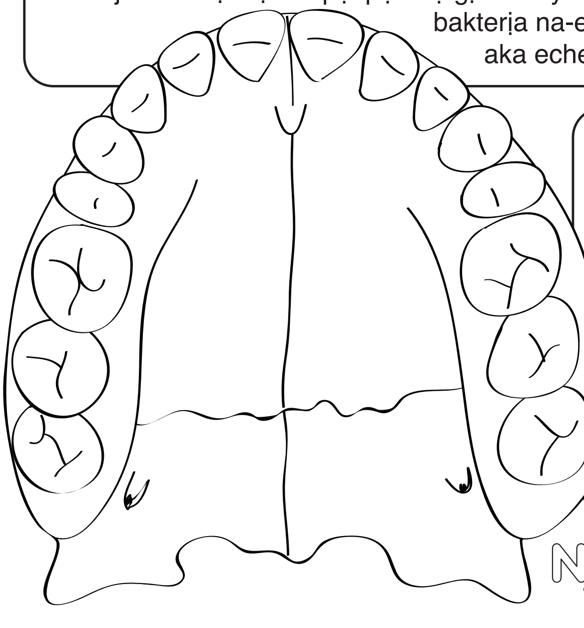
Nje Treponema

Ọ na-eme ka nri sitere n'akụmakụ gbazee ma na-agbari ọkpụrụkpụ nri ndị ahụ enweghị ike ịgbaze



ỤMỤ IRIGHIRI NJE MGBOCHI ỌKPỤ, NDỊ DỊ N'AHỤ

Ahụ gị bụ ebe obibi nke **puku ijeri** mkpụrụ nje ndụ, na mkpokọta ọnụ, a na-akpọ ha nje mgbochi ahụ gị. Nje bakterịa na-ebi n'ime eriri afọ gị na-enyere gị aka ịgbari nri ma mee ka usoro ahụ ji alụso ọrịa ọgụ sie ike. Nje bakterịa dị n'akpụkpọ ahụ gị na-enye aka mee ka ị dị ọcha, nje bakterịa na-ebikwa n'ọnụ gị na-enye aka echebe gị site n'ọrịa.



Ị MAARA?

Ndị ọka mmụta sayensị na-amụ banyere mkpụkọ n'eze na nsị ochie kpọrọ nkụ, iji kọwaa nje mgbochi ahụ sitere na chi ma ghọta nke ọma ihe na-ebute ọrịa.

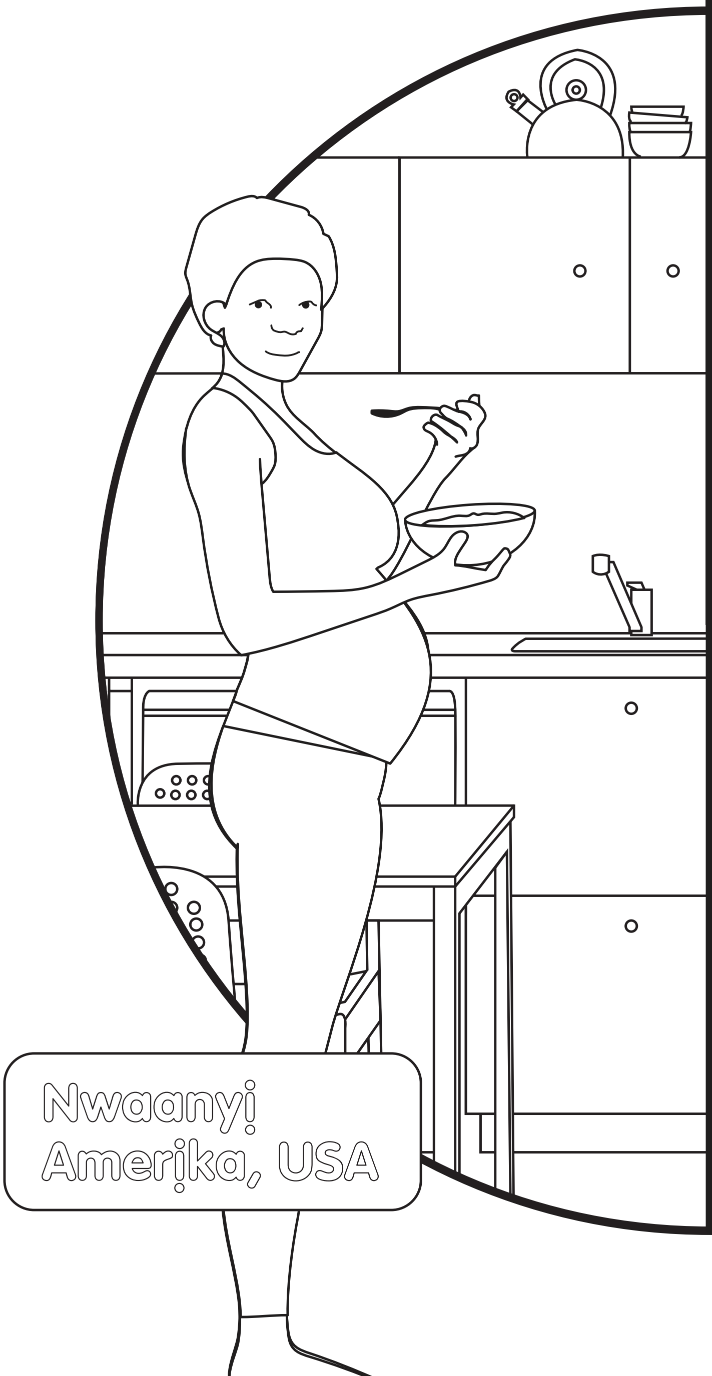
Nje Porphyromonas

NDỊ MKPA NRI

Ndị mkpa nri, ma bụrụkwa ndị a na-akpọ ndị nta, na-eri anụ ọhịa, nri ha na-agbanwe site n’oge a nọ na ya.

Tupu ọrụ ugbo amalite n’ihe dị ka afọ puku iri gara aga, mmadụ niile nọ n’ụwa bụ ndị mkpa nri.

Taata, ndị mkpa nri nwere ọtụtụ nje mgbochi ahụ nke eriri afọ dị iche iche karịa ndị bi n’obodo mepere emepe.

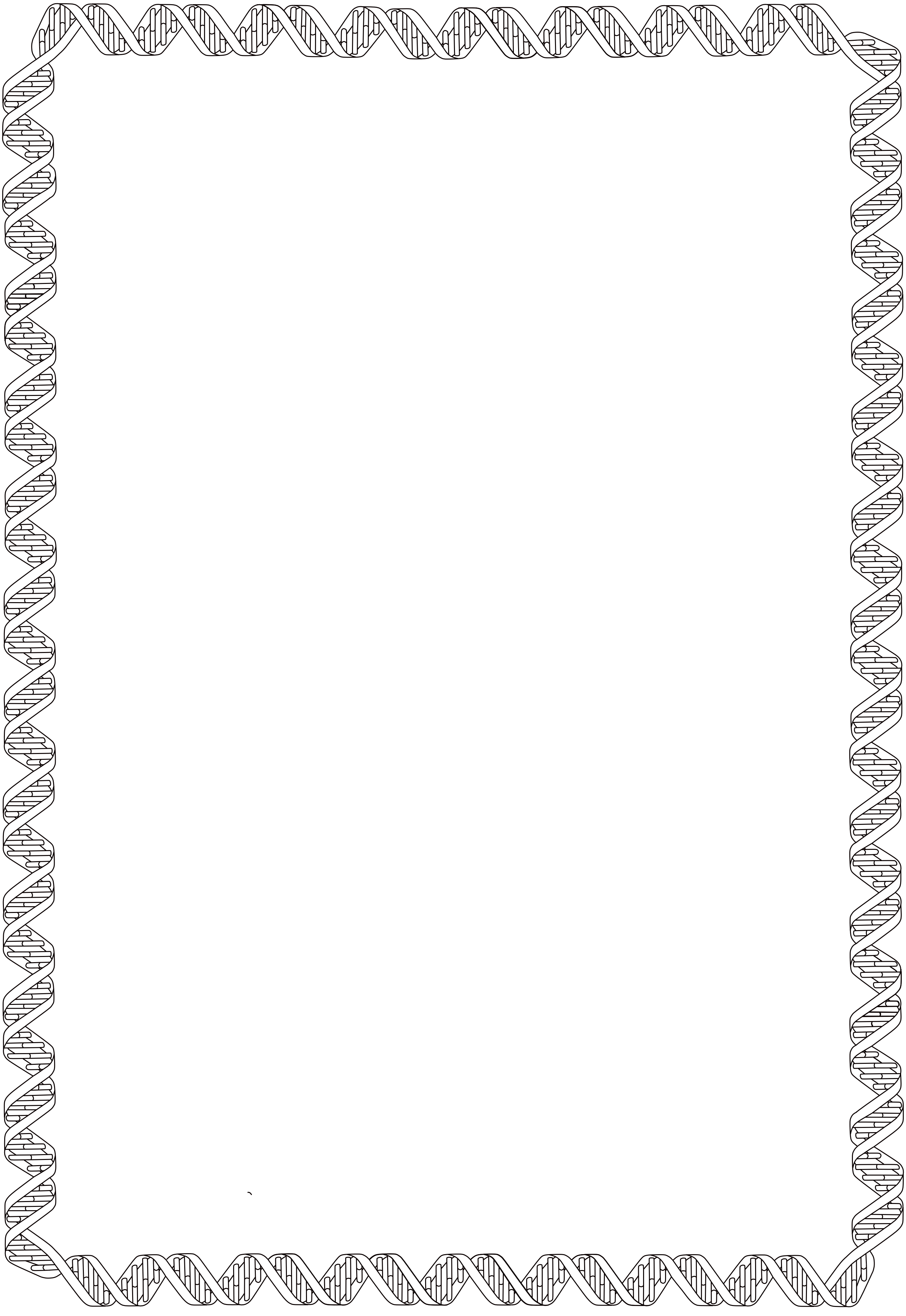


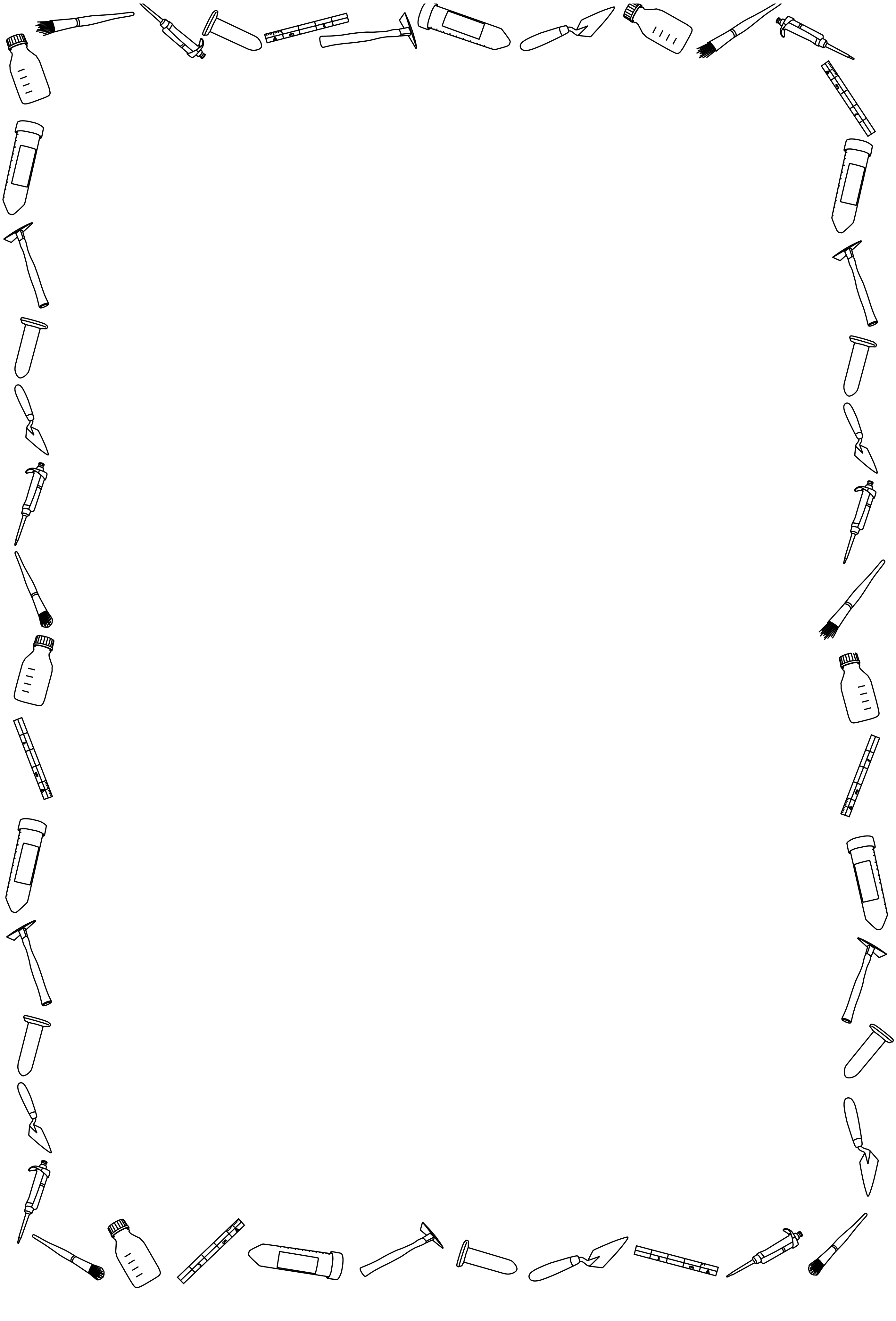
OBODO NDỊ MEPERE EMEPE

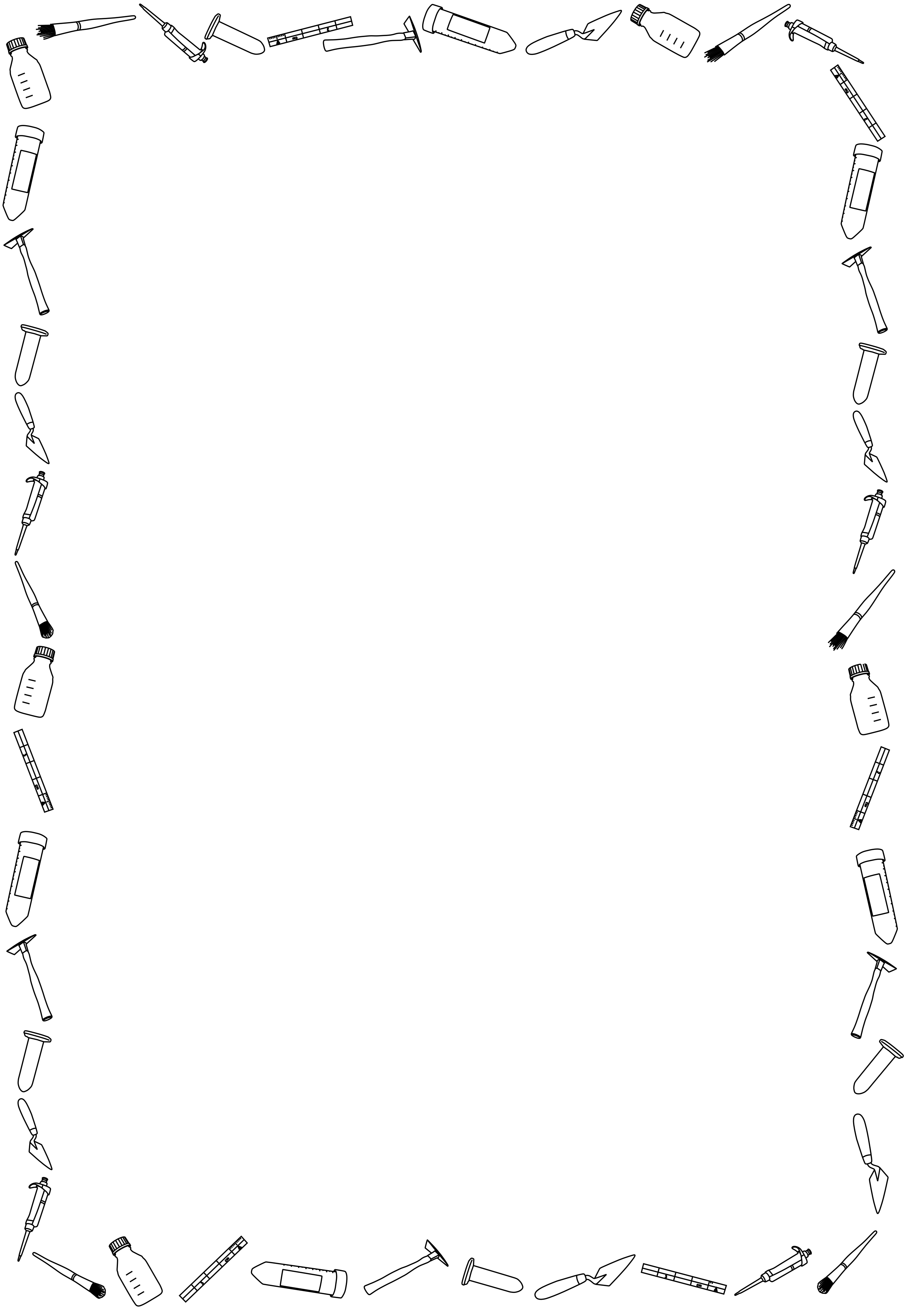
Obodo ndị mepere emepe na-erikarị nri ndị sitere n’ugbo, mmepụta nri bụkwa ọrụ pụrụ iche nke naanị mmadụ ole ne ole na-arụ.

Iji usoro tekịnụzụ rụ ọrụ ugbo, nchekwa na ndowe nri bụ mpaghara ndị dị oke mkpa na usoro nri ndị obodo mepere emepe, ọzọkwa, nri na-aga ogologo njem tupu e rie ya.

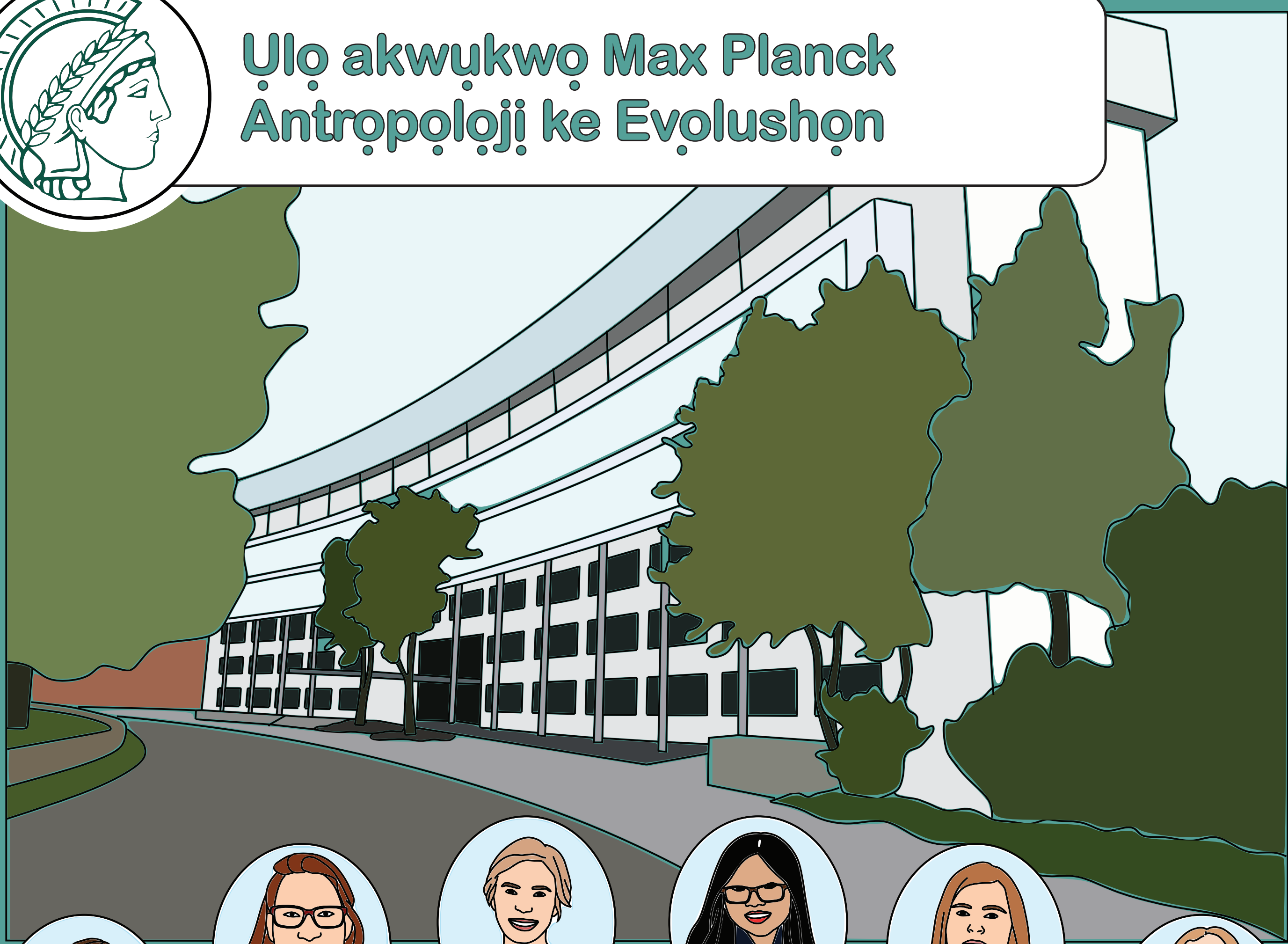
Taata, ndị mmadụ bi n’obodo mepere emepe nwere obere nje mgbochi ahụ dị iche iche nke eriri afọ, ndị nwere ike itinye ha n’ihe egwu dị ukwuu banyere ụfọdụ ọrịa ndị na-aza ahụ, bụkwa ndị anaghị ala ala. Taata, ndị mkpa nri nwere ọtụtụ nje mgbochi ahụ nke eriri afọ dị iche iche karịa ndị bi n’obodo mepere emepe.

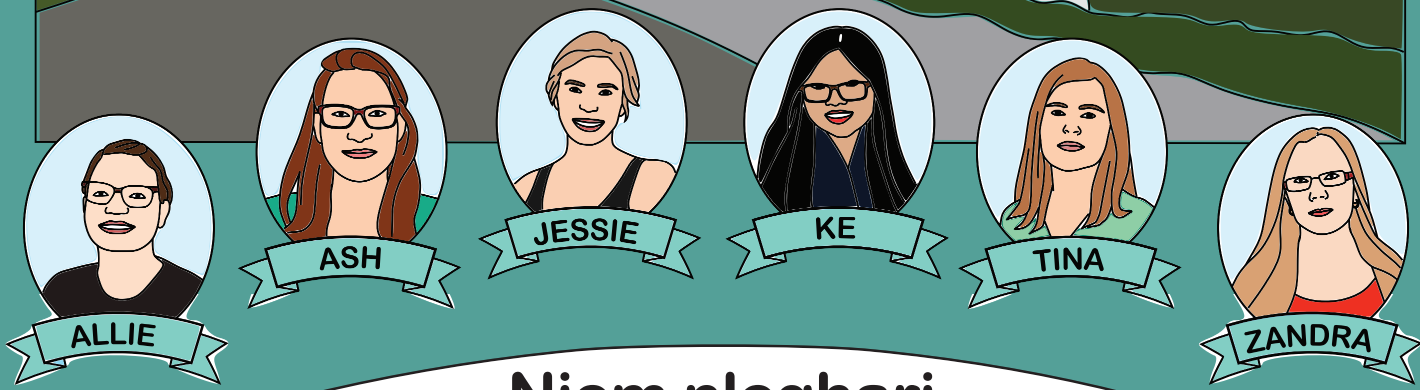






Ụlọ akwụkwọ Max Planck Antrọpọlọjị ke Evọlushọn





Njem nleghari̩ anya nchọpụta na

SAYENSỊ NKA MMỤTA IHE ỌKPỤ

Akwụkwọ ntinye agwa

Mụta etu ndị ọka mmụta ihe ọkpụ na ndị ọka mmụta sayensị si arụkọ ọrụ iji zaa ajụjụ ndị metụtara ndụ mmadụ n'oge gboo! Sonyere anyị dị ka anyị na-akọwa **ndị anyị bụ na ihe anyị na-amụ** site na **mmalite nke mmadụ** ruo **n'ajọ ọrịa na-efe efe sitere n'oke**. Mmụta banyere **ọpụpụ ọkpụ** na nchọpụta **afọ ole ihe nwere ike ịdị site n'àgwàrá ọkpụ**. Hụkwa etu ndị ọka mmụta sayensị si **na-ewughachi nri ọkpụ** site n'ụmụ irighiri akụmakụ fọdụrụ afọdụ. Chọpụta eziokwu gbasara **ịzụ anụ n'ụlọ** na sayensị hibere nri ndị sitere na **mmiri ara ehi**. Nyochaa **ọrịa ọkpụ dị iche iche** na **ọrịa ndị na-efe efe** ma chọpụta **nje mgbochi ahụ ọkpụ**.

Nke ndị ọka mmụta sayensị mepụtara n'ụlọ akwụkwọ Max Planck Antrọpọlọjị ke Evolushọn.

A tụghariri ya n'asụsụ Igbo site n'aka:
Ọkm. Chioma Vivian Ngonadi na Ọkn. Chukwuma Okeke