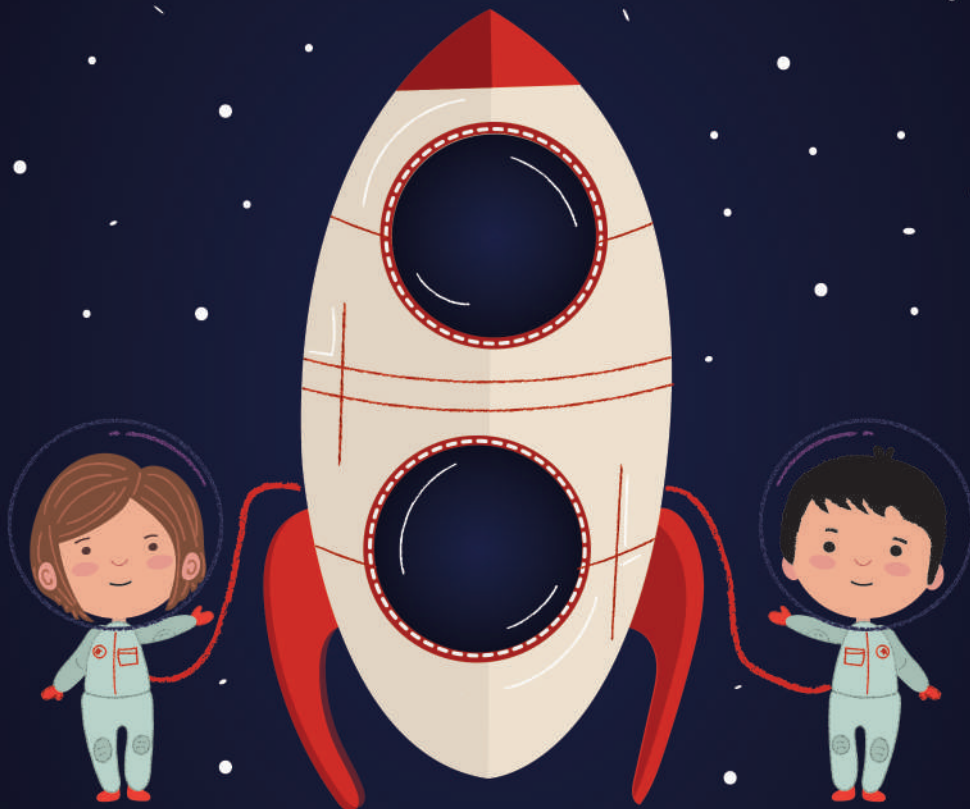


Tsokgle Maria Fernanda Arellano Curiel chu Maricruz Vazquez Bañuelos  
Tiku talhkgaxtulh wa Brenda Báez Rodríguez. Tiku tsokgle tutunakú wa Esperanza Ricaño Erasmo.

Wantu maklhakaskina xi tatsekgnia tajatát.  
Na kanaw paxí'ahnanaw nak akgapún.



Wantí akxilhkgolh Sociedad Astronómica de Puebla Germán Martínez Hidalgo A.C,  
kgalhtokgane Yulia Solovieva, kgalhtokgane Luis Quintanar Rojas  
chu wantí kaxtlawalh Elena Ugarte.



**Gobierno  
de Puebla**

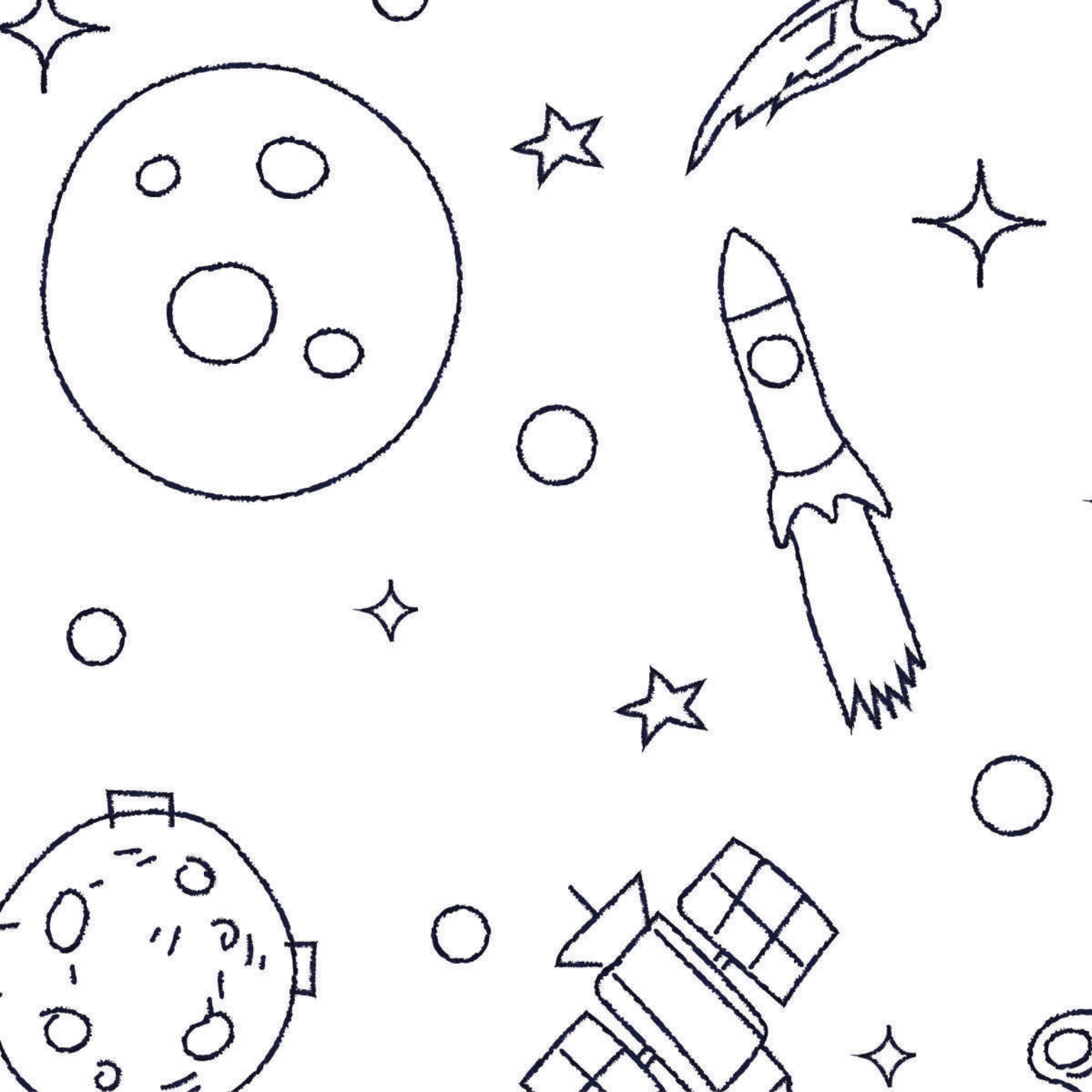
*Hacer Historia. Hacer futuro.*

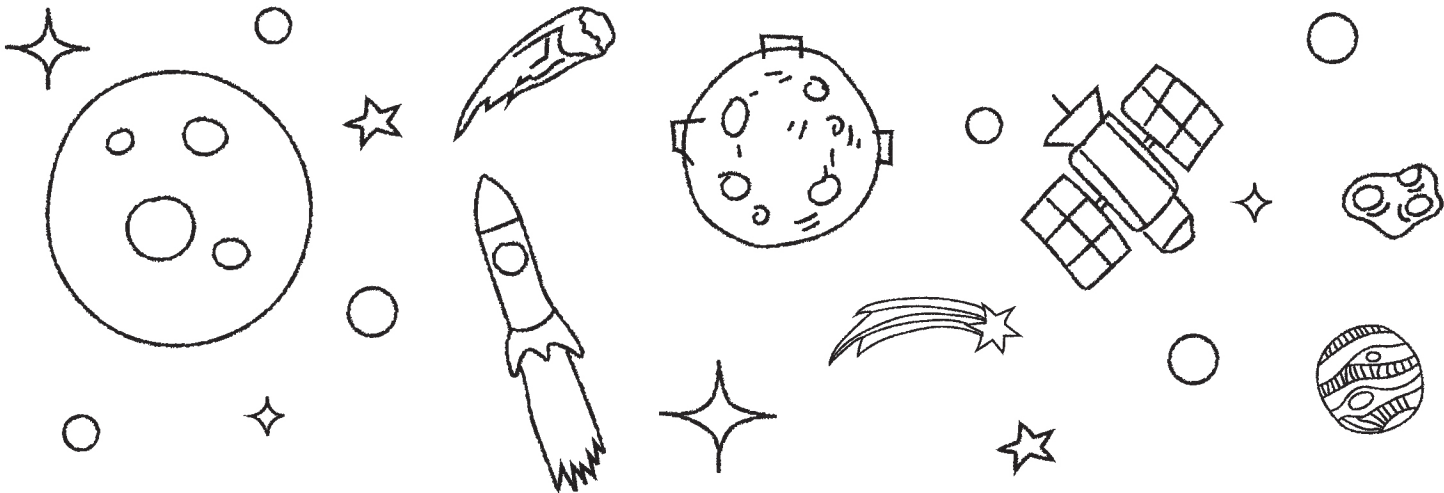


**Secretaría  
de Educación**  
Gobierno de Puebla

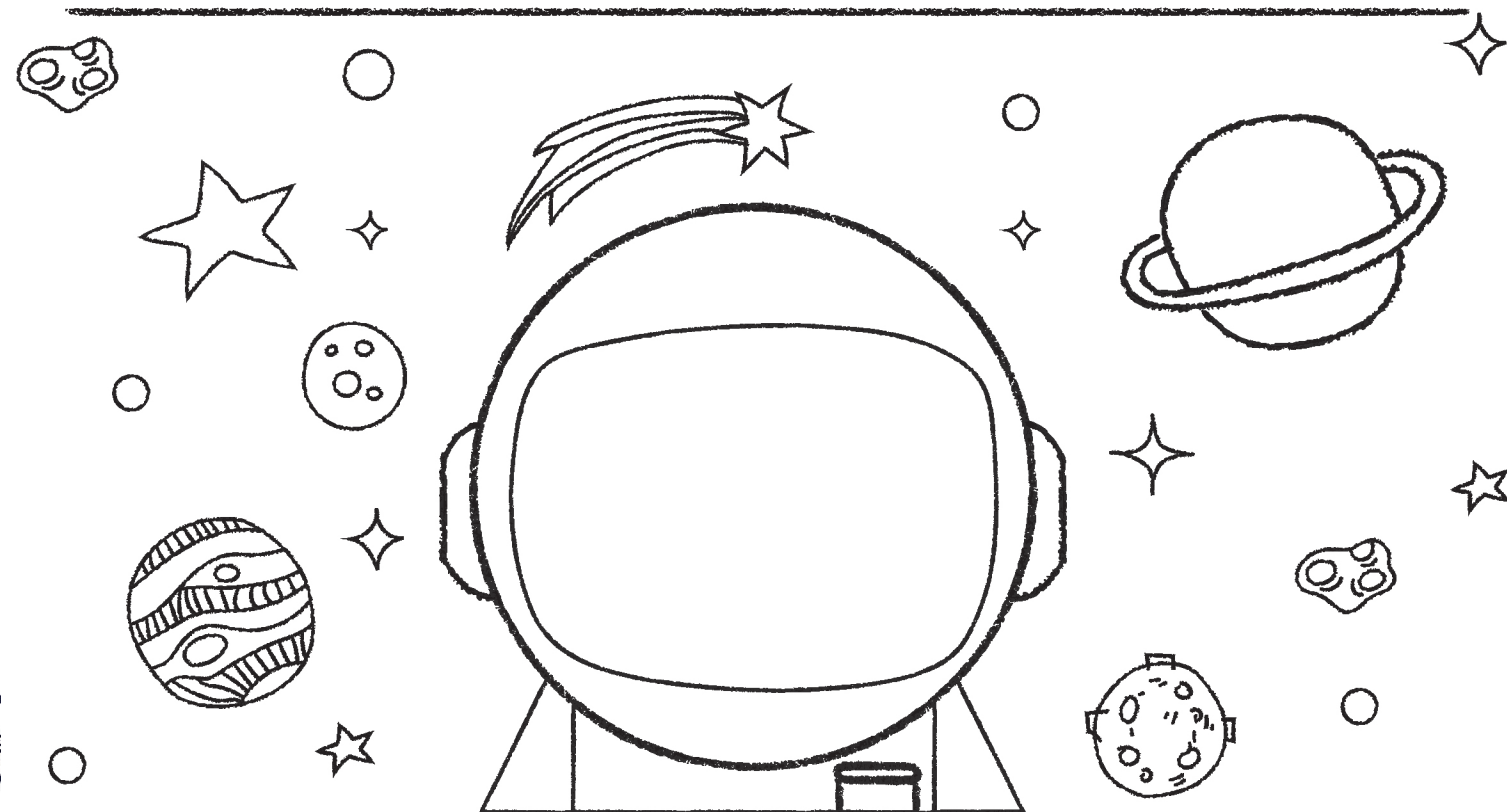
**CONCYTEP**  
Consejo de Ciencia  
y Tecnología del Estado  
de Puebla







Wa uma lhikgalhtowakga xla:



Lic. Miguel Barbosa Huerta  
PUXKU LHA LHILHAKGATUN WILKGOKGAL NAK PUEBLA

Dra. Ana Lucía Hill Mayoral  
XMAKGTAINA PUXKU LHA LHILHAKGATUN WILKGOKGALH PUEBLA

Dr. Melitón Lozano Pérez  
SKUJNEK TIKU AKGASTAKGYAWAI WA MAKGALHTOKGANE CHU TIKU  
KGALHTOKGAGOY XLHILHAKGATUN PUEBLA

Mtra. Nora Yessica Merino Escamilla  
TAKAMALH NIKU XKUJA NI KAXTLHUKAN LHIMAPAKGSÍN XLHILHAKGATUN  
PUEBLA.

Mtro. Victoriano Gabriel Covarrubias Salvatori  
MAPAKGSINÁ XLAK TAMAXTUMIT TALAKAPASTAKNÍ CHU TAKAXTLHUWAT  
XLHILHAKGATUN PUEBLA

Xlimakgtúm takaxtlaw México 2021.  
Wa tamakaxtulh Consejo de Ciencia y Tecnología del Estado de Puebla (Concytep).  
Priv.B de la 16 de Sept.4511, Col.Huexotitla, 72534, Puebla, Pue.  
**ISBN: 978-607-99058-1-1**

Wa uma lhikgaltokga tlan tamakuxtakan niku tlan akgxilhkan xpalakata putúm  
kgalhikan, kaxmanjua na walikan tiku tamakaxtulh chu niku tamakaxtunit.

Wantu maklhakaskina xi  
tatsekgnia tajatát.

Na kanaw  
paxi' alhnanaw  
nak akgapún.

Xli pulhna nak paxi' alhnan nak akgapún

Tsokgle María Fernanda Arellano Curiel chu Maricruz Vázquez Bañuelos  
Tiku talhkgaxtulh wa Brenda Báez Rodríguez. Tiku tsokgle tutunakú wa  
Esperanza Ricaño Erasmo.

Wa Malía chu Gabrielh Ihu lhakgatekgoy  
akxilhkgoy **papá' chu staku.**  
Chalí chalí lha katsisní akxilhkgoy akgapún.





Xi akxilhkgoy xa **katlha papá´**,  
lhu katuwa tlhuputankgoy lha  
**cosmonautas**

Wa cosmonauta xla lhitaxtuy  
**putsana**, patsay chu kgalhí  
talakapástakni, punchuna  
**kgalhtokgay** chu takaxtayay  
lha tlan nan tlaway **xtaskujut**  
**nak akgapún.**





Miguel Ihu xa tihan  
**cosmonauta**. Wa tachiwín  
**cosmos** wanputún **xli tlanka**  
**akgapún** chu nauta wanputún  
xlatamané akgapún.

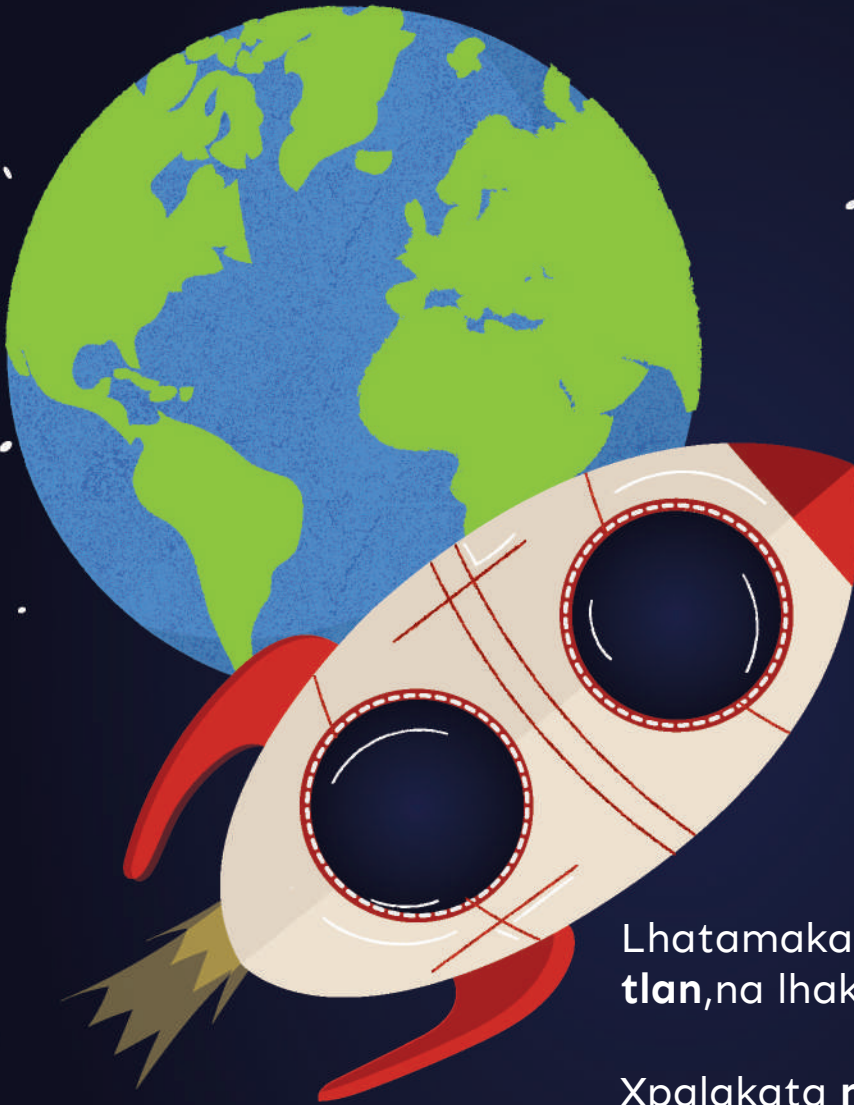
Chatúm **cosmonauta** wa  
xlatamané xli tlanka  
akgapún.

Akxni xla an paxialhnan  
lhin **putlaw** xla **akgapún**,  
na ka ta'án makgapitsi  
lhak **chixkuwín** chu lhak  
**puskatnín**, tiku kawanikan  
xa lhichalhuwa.



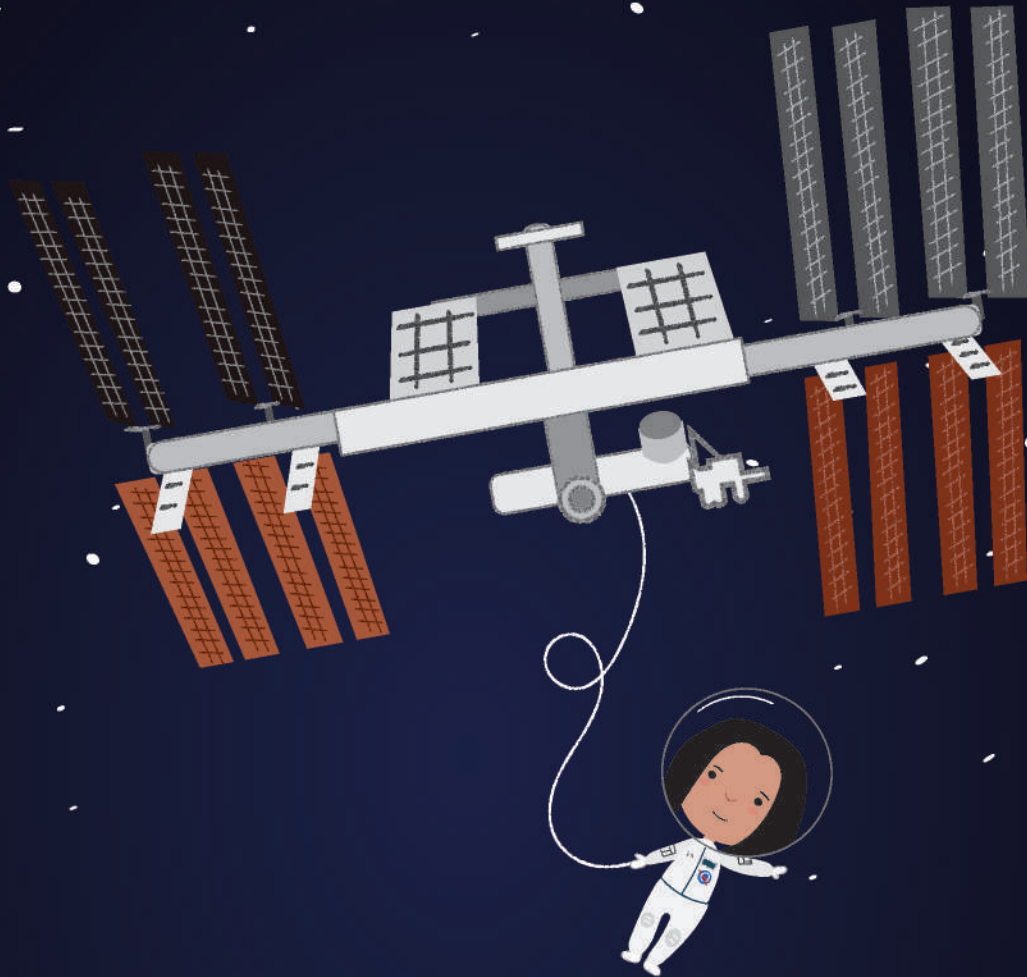


Xlakán cosmonautas ankgoy  
lhatamakgoy nak xli tlhanka akgapún  
wa pulhtamakgoy **putlaw xla akgapún.**  
Umá kiní putlaw,umakgolh lhuwa  
lhakaskinkgoy **tliwekge** chu tuku  
**lhikgosa** xpalakata lhi chan nak  
akgapún.



Lhatamakan nak akgapún lhu  
**tlán**, na lhakgachinin lhu **tuwa**.

Xpalakata **ni tatlhakgoy** xi  
na ankgoy paxialhnankgoy  
pulha wa **cosmonautas**  
talhagachitanokgoy **tipuxám**  
**kilhtamakú**.

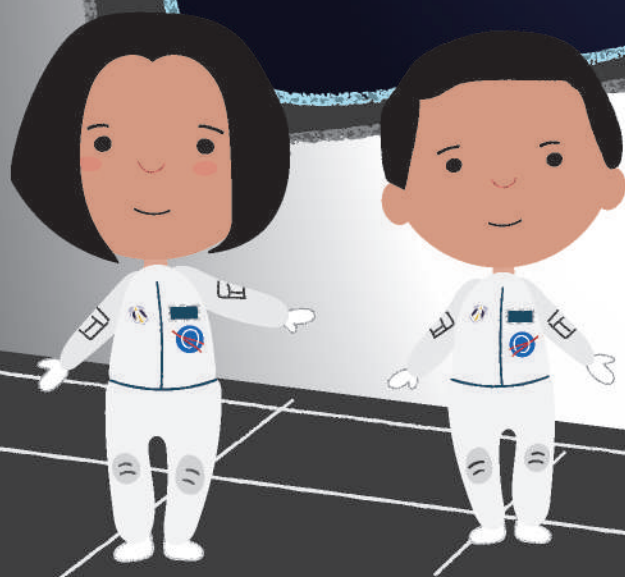


Wa Brenda xla cosmonauta xa  
lhakaskinka .Xla lhuwa kilhtamakú  
lhin lha skujma nak **chiki xla**  
**akgapún.**

Wa **chiki xla akgapún** lhu xa **tlhanka**  
wanikan **Chiki xla Akgapún xli**  
**.Pokgto Katiyatna.**

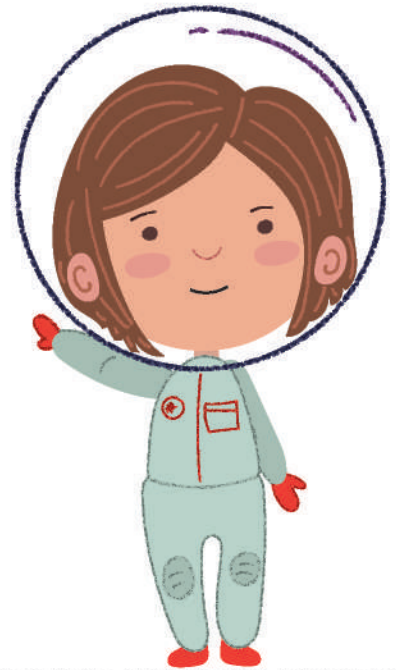
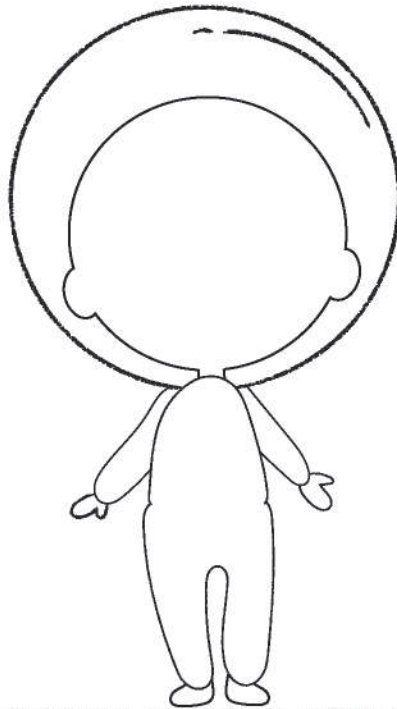
Xpalakata tlan na tlhaukgoy **taskujutkan**  
**xla akgapún**,xlhakán wa Brenda chu Miguelh  
xlhakaskinga **tlhokgoy xhitaykan**.

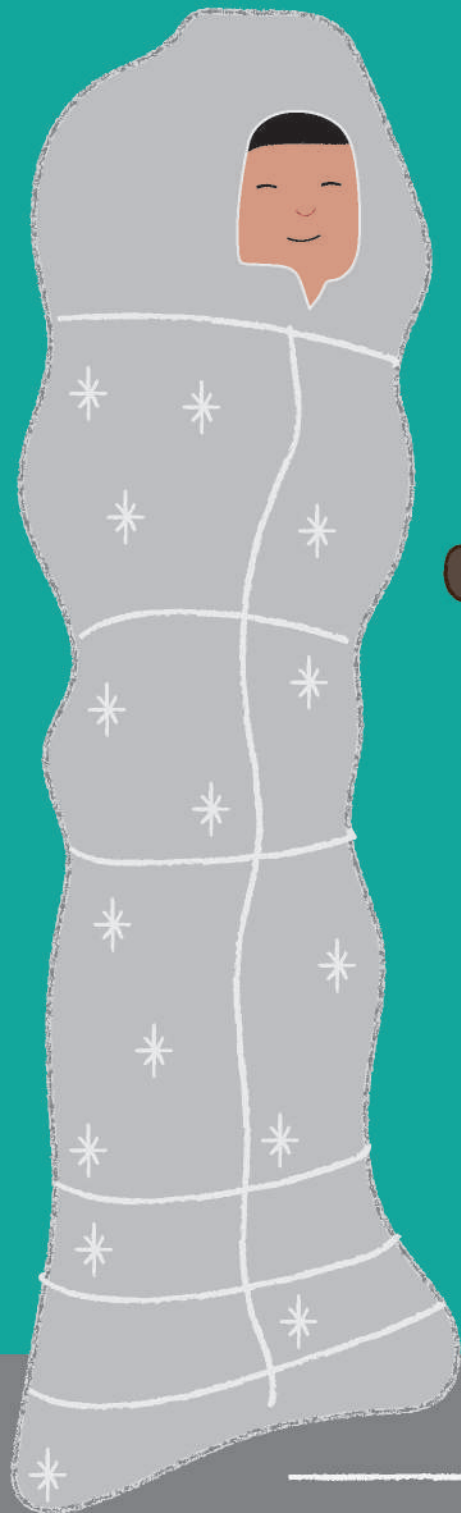
Wix tlan na  
kamakgtaya,wix  
na lhakaskina mi  
**talakapástakni**.



# Lhitlawat 1

Katlawá tuku tapunuya xhi napina akgapún.





z z z z z



Wa cosmonautas lhakgachinin  
akgtúm kata tulhkgoy nak xchikan  
xla akgapún.

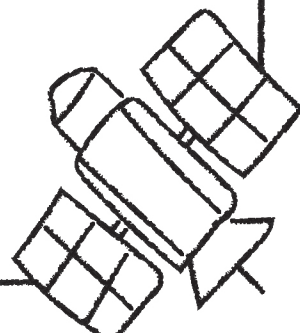
Lhu aktsu niku tamakgoy. Wa lhilhay  
nitsinkganau nak akgapún,xlakan  
ka taikgoy xi lhtatakgoy, wa lhilay  
tuku pulhtatakgoy ka unín lhaklay,  
na ka tachapakgaxtokgnik nak  
makgacha.

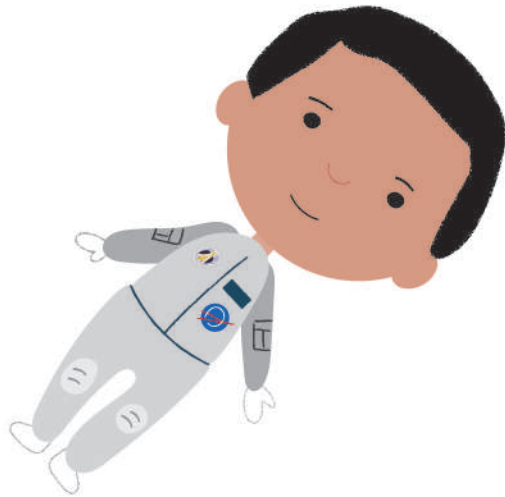
Wa **gravedad** kiní akgtúm  
**lhitlewekgé** wantu ni lhi akgxilha,  
wa umá ka lhtantiy nak xpuitad  
**Katiyatna.**



# Lhitlawat 2

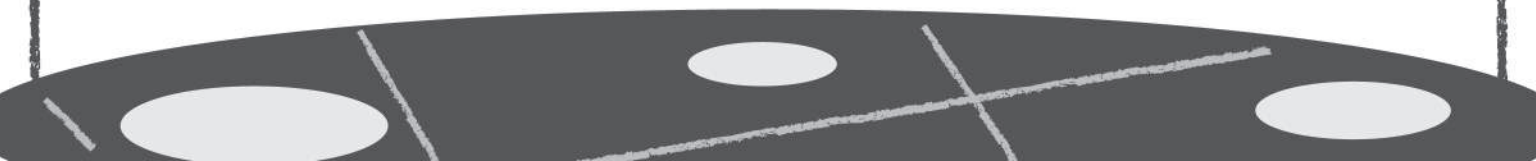
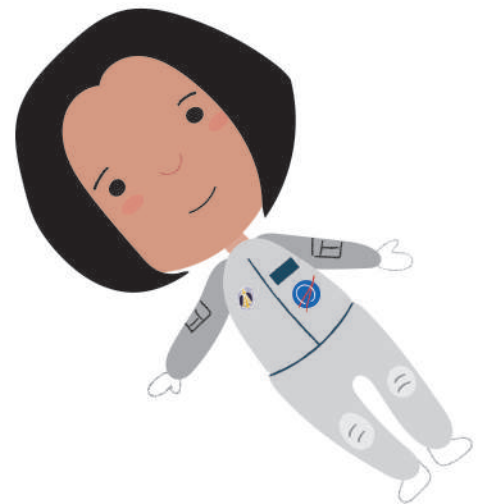
## Katlawá niku Ihtataya.



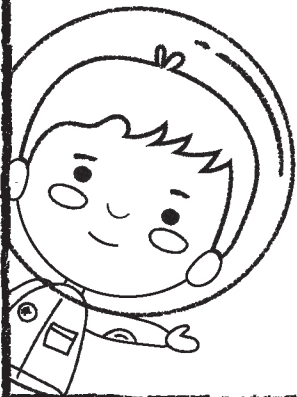
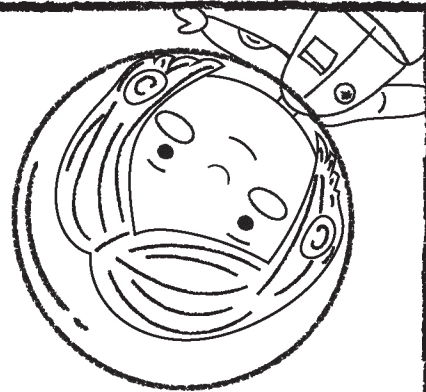


Umá kilhtamakú, wa cosmonautas  
lhu lhuwa chu katuwa pastakgoy, na  
ka katuwa **tsaksakgoy xlakata wa  
gravedad.**

Palh wix na makgaxtakga akgtúm  
mantsana nakx pulhakne ni  
**lhtataya anda tamayacha nak  
tiyat,** palh wix na makgaxtakga  
nak **chiki xla akgapún** wa  
mantsana **ka unin tulhai.**



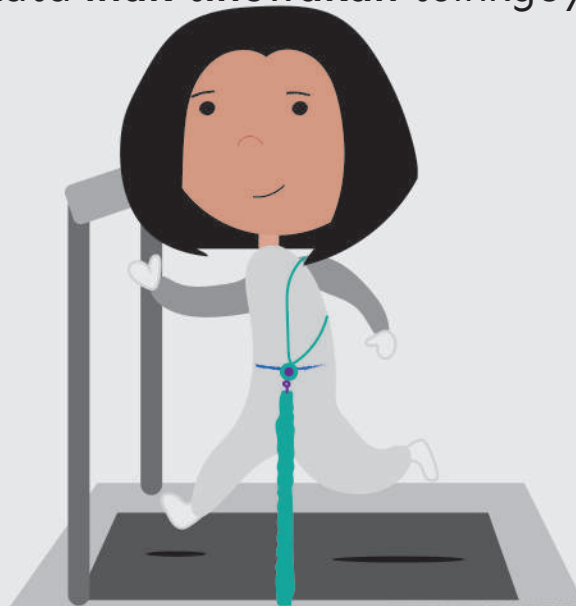
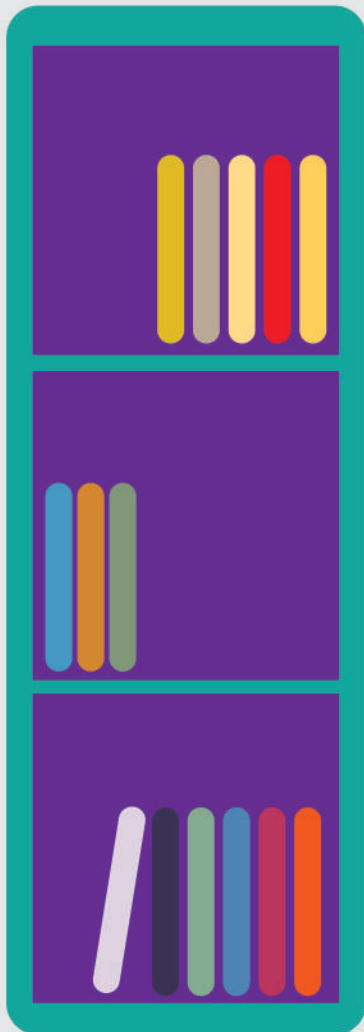
Lhitlawat 3  
Katlawá tuku pastakte umá  
kilhtamakú nak mi chik.





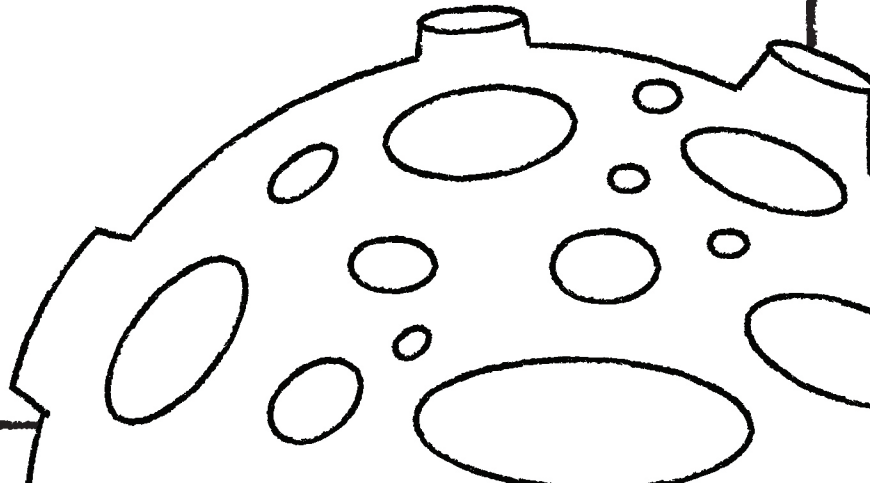
Nak akgapún niku wilhkgolh staku  
chu chichiní,wa **lukut chu tiatliwa  
ta xlawanikgoy**.Xlakán cosmonautas  
chalí, chalí talhaxtonkgoy xlakata  
**makgtakgalhkgoy xtiatliwakan**.

Xlakata **lhak tlhewakan** tulhkgoy.



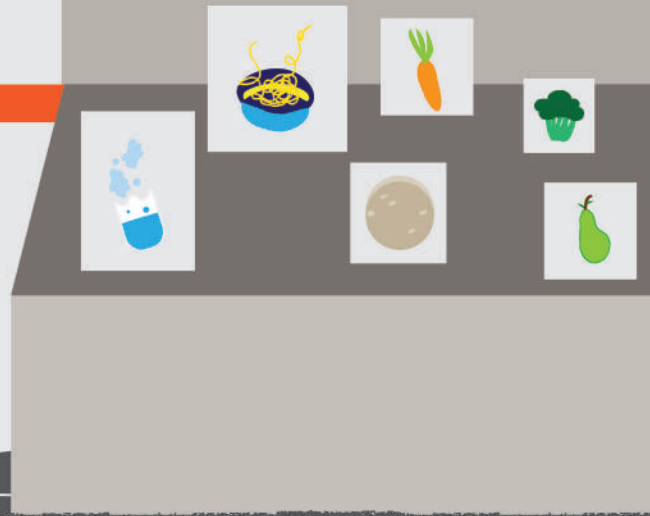
#### Lhitlawat 4

Katlawá tuku tlhuya xi talhakgxtongka nak mi chik  
o tuku lhakgatiya kgamananak xi talhakgxtongka.



Wantu lhi lhakgatit nak  
kilhtamakú,xi lhak chan  
xa kilhtamakú wainkgan.  
**Xlakan cosmonautas lhu**  
**lhakgatekgoy chaw.**

Umá lhak **kgama** chu kgalhi  
tuku **matlhewekglhnan,ni**  
**makgaxtakgoy** xpulhun  
palh ka **unin na´án**, pi  
makgaxtakgoy xpulhun  
tlan **na lhakxlhai** chiki xla  
akgapún.



Lhitlawat 5  
Katlawá tuku lhakgatiya lhiwaya.

Kalhakapastakte na waya xatawakátkiwi, xatawakátpalhma chu lhikgotnana chuchut.

**Xatawakátkiwi**

**Xatawakátpalhma**

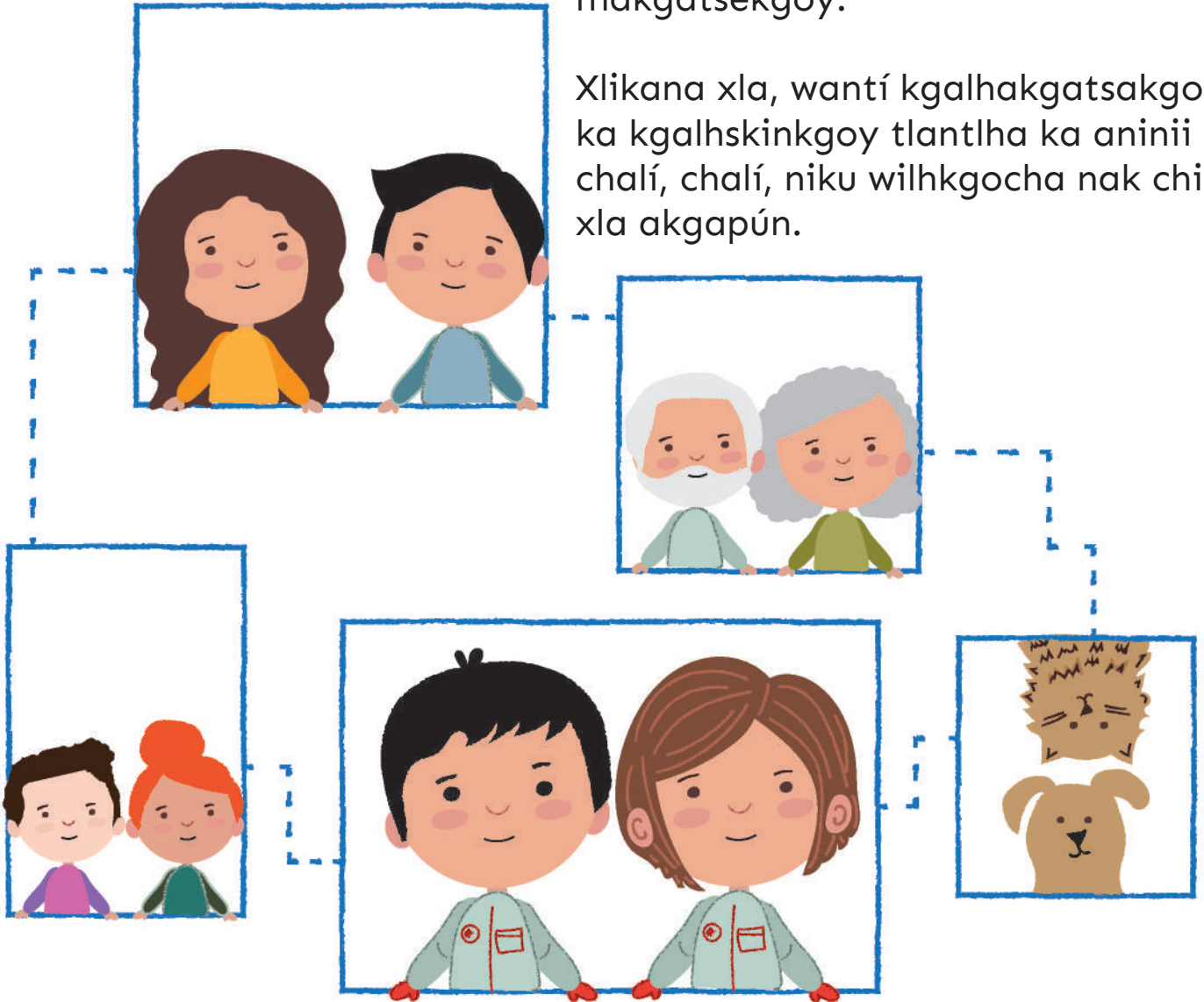
**Saksini**

**Lhikgotna**

**Talhiwan tuku  
lhakgatiya**

**Xlakan cosmonautas lhu  
xlakaskinka takgalhchiwinkgoy**  
wantí kalhagatsankgoy, xlakan  
lha kgalhskinkgoy tlhantla  
makgatsekgoy.

Xlikana xla, wantí kgalhagatsakgoy  
ka kgalhskinkgoy tlantlha ka aninii  
chalí, chalí, niku wilhkgocha nak chiki  
xla akgapún.



# Lhitlawat 6

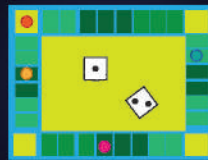
## Katlawá tiku kalhagatsana chu tlantla wix makgatsiya.

Ka akxilhti lhitlawat 10, wa xpalakata na pastaka tunta wanputún



Akgxni skukgoy nak akgapún,wa  
cosmonautas **lhu lhipaxukgoy**  
pokgto tuku tlhuokgoy.

**Yuri Garín** wa xa pulhna  
cosmonauta tiku kilalh  
**akgapún** nak kata 1961. Wa  
stakujut tuku ki tlawalh nak  
akgapún,ka lhitakgalhspitle  
nak katiyatna.



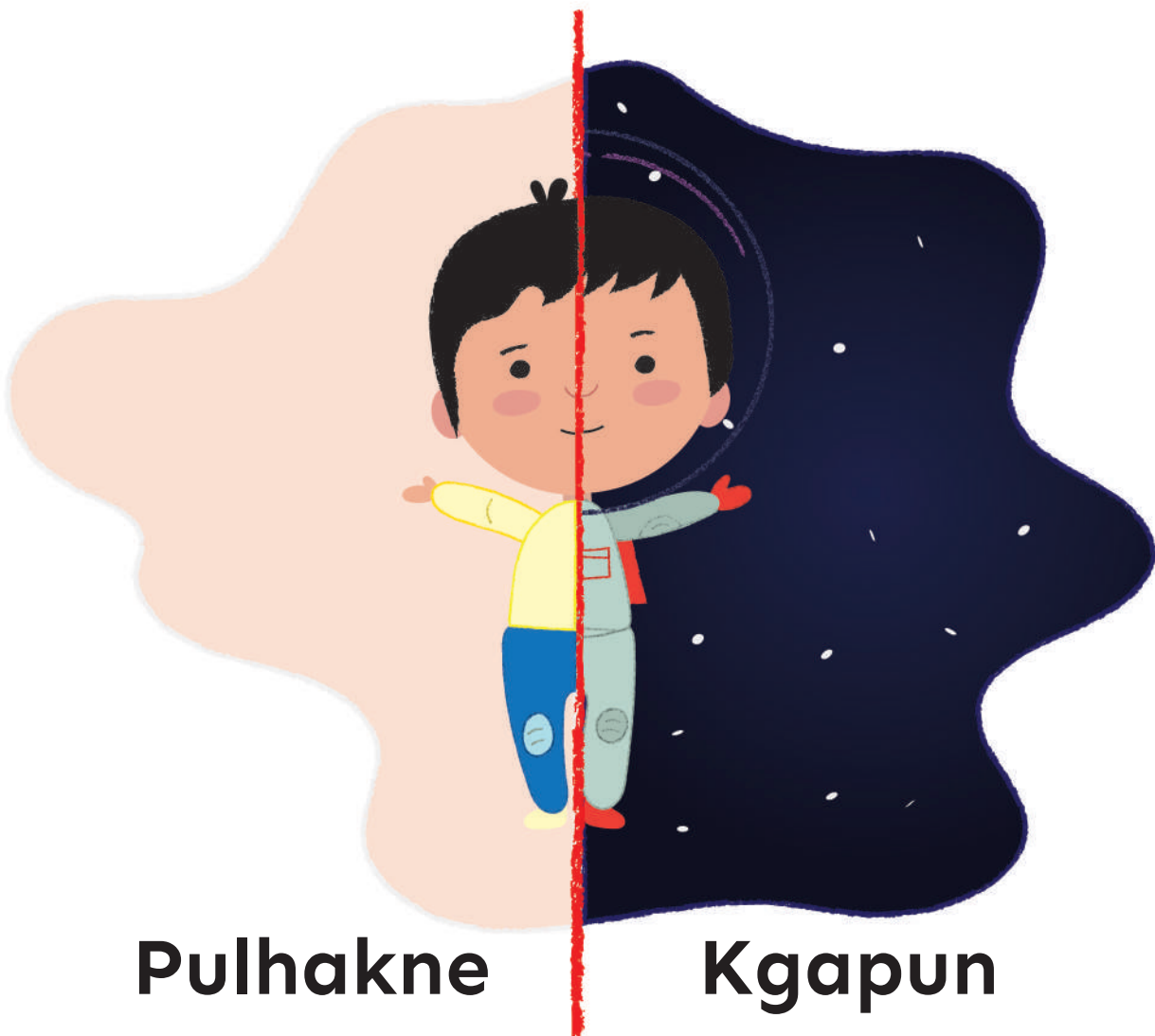
## Lhitlawat 7

Katlawá tuku lhu lhakgatiya tlhauya xi tulhia nak mi chik.



Lhagachinin wa cosmonautas **taxtakgoy**. Xi taxtokgoy tanks **takaxtaikgoy** na lhu kuenta **tluokgoy**.

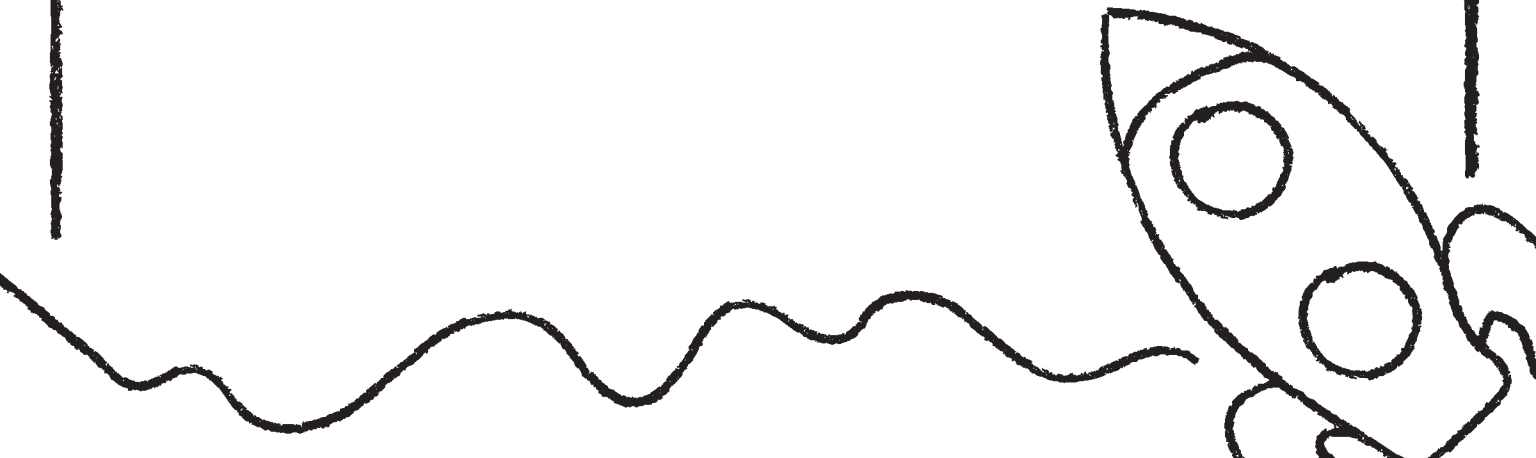
**Wax** tapunutkan tuku lhenkgoy akgapún ka makgtayay cosmonautas lhake ni tu lhanekgoy xi lhu kachichi u xi lhu kakgawiwi.



## Lhitlawat 8

Katlawá tlantla tamaktakgalha nak mi chik chu tlantla  
takgaxtayaya xi ka tataxtuya tiku katawilha nak mi chik.

¿Cha wix lhakaskina lhekge tuku makgtayayan?



Xlakán cosmonautas lhak kaxtluokgoy xkiltamakukan  
 xlakata lhuwa taskujut kgalhekgoy.

Xlakán kgalhekgoy taskujut,tlhan tlukgoy xakstukan o lhi  
 lhawa.



| L | M | M | J | V | S | D |
|---|---|---|---|---|---|---|
| ✦ | ✦ | ✦ | ✦ | ✦ | ✦ | ✦ |
|   | ✦ | ✦ | ✦ |   | ✦ |   |
| ✦ |   | ✦ |   | ✦ | ✦ | ✦ |
|   | ✦ |   | ✦ |   | ✦ |   |
| ✦ | ✦ |   | ✦ |   | ✦ | ✦ |
| ✦ |   | ✦ |   | ✦ |   | ✦ |

Kakaxtluwa  
mi putama.

Katlawande

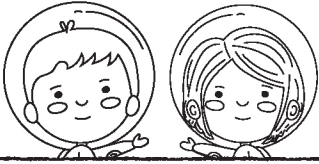
Kakgaltokga

Kalhakapatsande

Kaskulunku lhak

Katuwa  
katlawwa

Lhitlawat 9  
Katluwá tuku natlhuuya nak kilhtamakú.

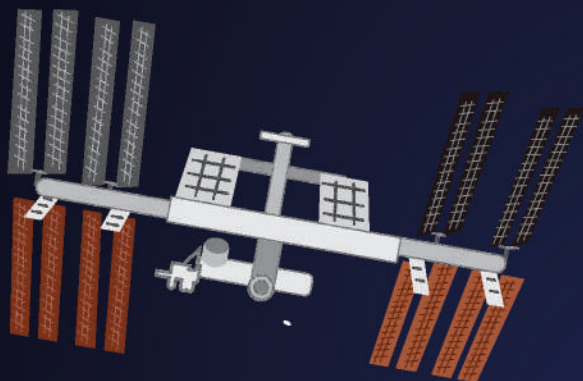


| L | M | M | J | V | S | D |
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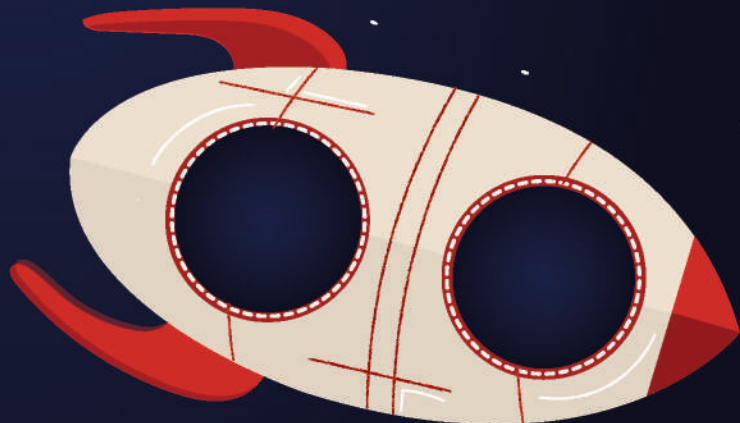
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Wix tlhan na tsokga tuku katatluwa makgapitsin.



Wa gravedad xla akgapún  
wendo katluinii xmaknekan  
cosmonautas. **Xi xlakán**  
**tapuspitkgoy ,xlakan**  
**stakgoy, tlakgankgoy 8 cm.**

Lha ukú wix katsiya tiku  
cosmonautas chu xi ankgo  
paxi'alhnakgoy akgapún.





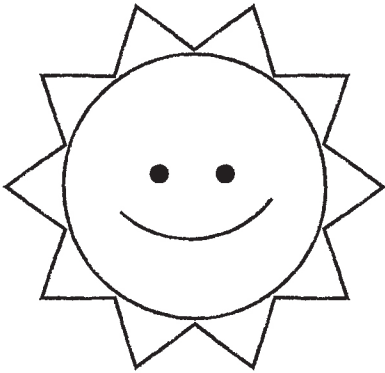
Ukú xkilhtamaku na tapuspitaw  
nak katiyatna ,wix takaxtainita  
xlakata “Wix na tulhia  
nak mi chik”.



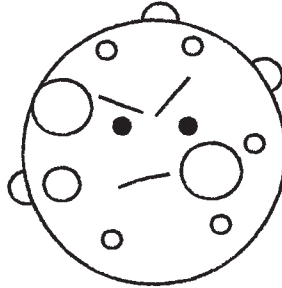
¡Lhak akgxilhpalhiaw lha mi  
nacha tapaxialhnit!



Lhithawat 10  
¿Tuku wix makgatsiya?



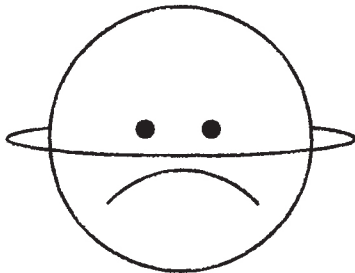
Tapaxuwan



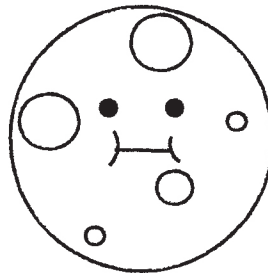
Tasitsit



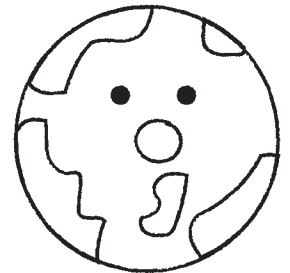
Tapekua



Talhipuan



Kgonkgana



Tamakgalha

Lhitlhawat lhakaskinga 11  
 Nak akgapún wilhkgolh akgtsayan kataxawat lhi  
 takgalhspitkgoy chichiní.

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

Mercurio, Venus, Tierra, Marte, Jupiter, Saturno, Urano chu Neptuno. Plutón na chuna lhi  
 takgalhspita chichiní. Wa xa aktsu kataxawat wanikgoy.

## Lhitawat lhakaskinga 12

Kalhi takgalhchiwinte wantí kalhakgatsana tuku wix pastakte chu  
tuku tlhawa lha uma kilhtamakú.

Wix: \_\_\_\_\_

Kit kiwanikan: \_\_\_\_\_

Kit kikata: \_\_\_\_\_ Kit kinchik we: \_\_\_\_\_

Uma kilhtamakú makgatsiy:

☆ Paxuhuay

☆ Sitsiy

☆ Tamakgalhai

☆ Lhipuhan

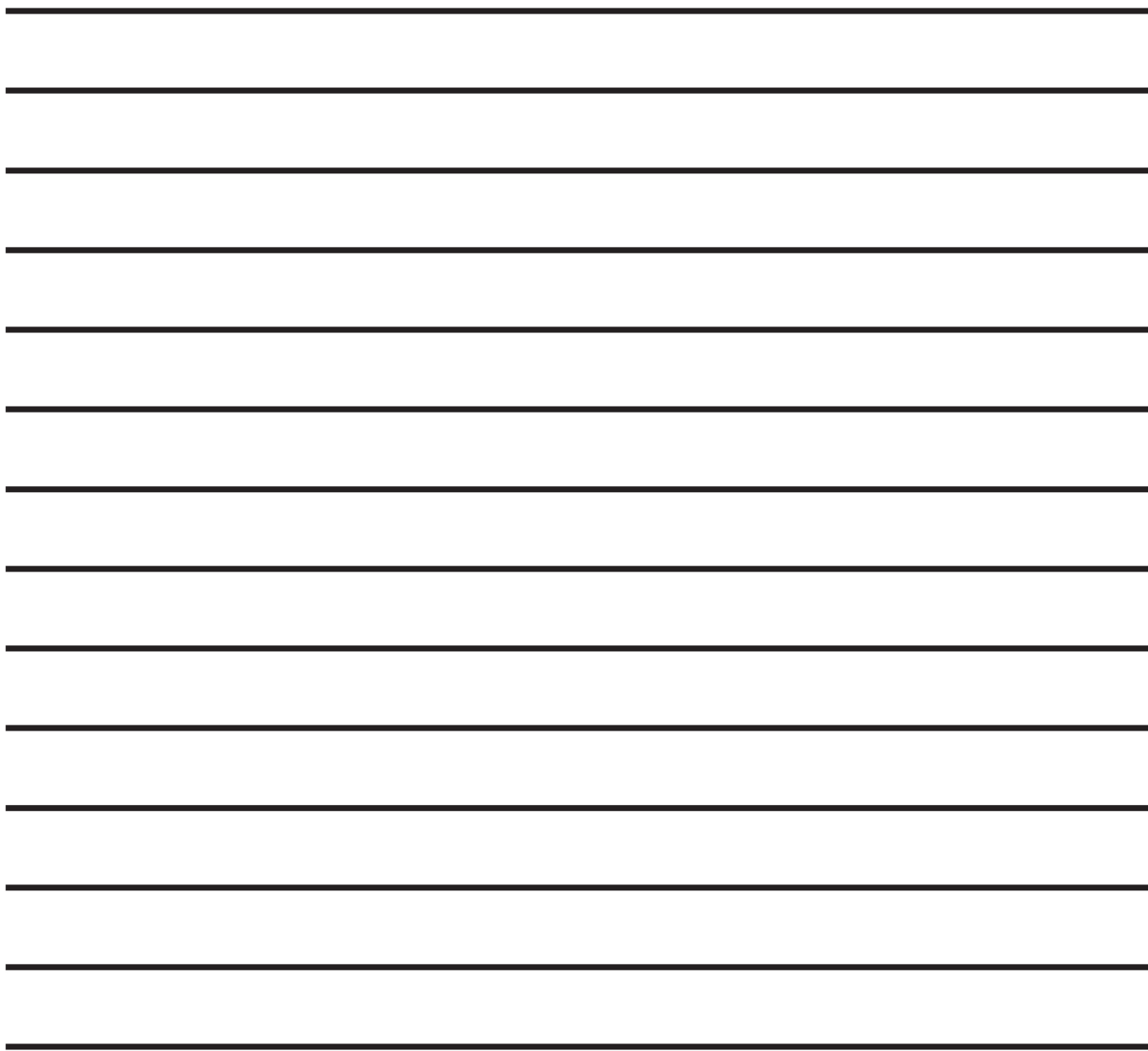
Kit wanputunan: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



## Umá wa xlihi lakaskin tiku na maktayayan, tiku na maktayayan tlanka xlihiwanak.

### **Xlakata tlan na taxtunian tuku na tlhauya lhawan umá lhikgalhtowakga.**

Wa umá lhikgalhtowakga katuwa lhitlhawat,xlhakaskinkga tlan na maktayayan wa mintse o wa mintlhat,palh aktsuku wix.

- Nituwa xa lhitlawat: 1,5 chu 10.
- Tsinotuwa xa lhitlawat: 2, 3, 4, 6,7 chu 8
- Lhutuwa xa lhitlawat,unok nakgaltokgaya chu na tsokgnana:9,11 chu 12.

### **Tuku kuantanatluiya**

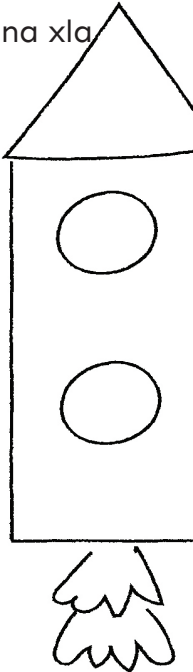
Pokgto tuwa lha ukú lhamaw chu talhakpalilh lha ukú kilhtamakú.

Lha ukú nak akxilhaw tlantla lhatamayaw. Wa uma tuku titaxtuma tlan lhakpalhi tuku makgkgatsiyaw, tuku pastakaw chu tuku tlhuyaw.

Xpalakata na katsiyaw tlhantla we kitiatlhiwakan chu kitalhakapastatnikan, na chuna xla tiku kalhakgatsanaw,xa tlan kuantanatlhuyaw tuku wan Pukuchin Mayo (2020):

- Palh lhu tankun talhakgpali tlhantla laklhaya.
- Palh lhu kalhipuan
- Palh wix niti katakgalhchiwinak
- Man tasapaniya o palh tiku lhichwinan pi tasapaniy.
- Palh lhi kgalhchiwinan o na pastaka linin.
- Palh kasitsiyhai
- Palh talhakpalhilh tlhantla wayán
- Palh taktujul xlihi tsinkga
- Palh nilai lhtatai
- Palh lhu chalí chalí,katsanii xa akgxákga´ o pakatsán
- Ni lhii kuenta tlawai o ni akgatesa

**Palh wix tekgsa o makgatsiya tuku tatsokgnik ka patsa tiku na makgtayayan.**



## Taputsán nak likgahtáwakga

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