huuhuksinksapaya • huuhuksinksp • Arithmetic*

We will learn to state equations like the following in Nuuchahnulth, using the four basic operations addition, subtraction, multiplication, and division.

(1)	C	ʔaqaqḥ ċawaak ʔuḥʔiiš ċawaak.	What is one and one?
	C	ċawaak ʔuḥʔiiš ċawaak ʔaƛiičiƛʔiš.	One and one become two.
	C	muu ċawaaʔatu qacċiičiƛʔiš.	Four minus one becomes three.
	C	qacċuṗit muu ḥayu ʔuḥʔiiš ʔaƛiičiƛʔiš.	Three times four becomes twelve.
	C	ʔaƛakʷał ʔaƛḥtačiƛ muučiƛʔiš.	Eight splits in two and becomes four.
	C	ʔaƛpu qacċaḥtačiƛ ʔaƛiičiƛʔiš, ċaawapuƛ.	Seven splits in three and becomes two, one is left over.

When you need generic words to describe arithmetic and the four operations, use these verbs:

(2) huuhuksinksap BCT, Q huuhuksinksp (vt) (on) ..... counting it together, doing arithmetic, mathematics
ƛaya?ałaẏap BCT, Q ƛayałaayp* (vi?) (cp) ..... add more onto, addition
ʔuuš?atap BCT, Q ʔuuš?atp (vi?) (cp) ..... take some off, subtraction
ʔayiiẏap BCT, Q ʔayiiyp (vt) (cp) ..... make it many, multiplication
xačḥtaẏap BCT, Q xačḥtaayp* (vt) (cp) ..... divide it, division

We know of no Nuuchahnulth language yet for ordinal numbers apart from ‘first’ and ‘second’, fractions apart from ‘half’, negative numbers, or even, odd, or prime numbers.

Usually, it is convenient to state equations so as to match the order of symbols in our mathematical notation, ex. $2 \times 3 = 6$. But be aware that the natural word order of Nuuchahnulth puts the predicate first, ex. *ṅupučiƛʔiš*. Both orders are acceptable:

(3)	C	ṅupučiƛʔiš ʔaƛṗit qacċa.	Two times three becomes six.
	C	ʔaƛṗit qacċa ṅupučiƛʔiš.	Two times three becomes six.

 This information is based on the Taataaqsapa Dictionary, research by John Rampanen, and judgements by Josephine George, Fidelia Haiyupis, Hilda Hanson, Julia Lucas, and Simon Lucas. Speakers of different dialects were consulted separately. This research was supported in part by the Kinkade Language and Culture Fund, and by Ehattesaht-Chinehkint First Nation.

We use the following words and suffixes for the four operations. Take care to use these appropriately according to their aspect. In the simplest equations, we add the endings directly to numbers, but with very long equations, it is often convenient to use the free words *ʔuʔałačiƛ, ʔuʔatu,* and so on. Usually we state equations intransitively, but they can also be stated transitively, ex. *muuʔataṗi sučˇa ċawiiẏap*, 'Take four from five and make one.'

(4)	ʔuḥʔiiš CQ, BT ʔuḥʔiš, B ʔiš, BCT ʔaḥʔaaʔaƛ, Q ʔaḥʔaaƛ	and, plus
	–(ʔ)ałačiƛ, –(ʔ)ałaẏap, ʔuʔałačiƛ (cp)	so many go onto (screen), are added to
	–ʔatu, –ʔatap, ʔuʔatu (cp)	so many fall off, minus
	–ṗit, –ṗiṫap, ʔuṗit (aa) (anaspectual)	so many times
	–ḥtačiƛ, –ḥtaẏap, ʔuḥtačiƛ (cp)	it divides into so many parts
	L–apuƛ, L–apup, ʔuupuƛ (cp)	so many stick up, remains after dividing

To state equations, you will need to know how to use the numbers in the complete aspect, as well as how to add the above suffixes to them. Here are the complete aspect forms of the digits to ten:

(5)	ċawaakšiƛ BCT, Q ċawaakšƛ	ṅupučiƛ BCT, Q ṅupučƛ
	ʔaƛiičiƛ BCT, Q ʔaƛiičƛ	ʔaƛpučiƛ BCT, Q ʔaƛpučƛ
	qacċiičiƛ BCT, Q qacċiičƛ	ʔaƛak^{w}ałšiƛ BCT, Q ʔaƛak^{w}iłšƛ
	muučiƛ N	ċawaak^{w}ałšiƛ BLA, HT ċawak^{w}ałšiƛ, Q ċawak^{w}iłšƛ
	sučˇiičiƛ BCT, Q sučˇiičƛ	ḥayučiƛ BCT, Q ḥayučƛ

Here are the forms of the digits to four plus the five arithmetical endings (BCT):

(6)	–(ʔ)ałačiƛ	–ʔatu	–ṗit	–ḥtačiƛ	L–apuƛ
	ċawaaʔałačiƛ*	ċawaaʔatu	ṅuṗit	—	ċaawapuƛ
	ʔaƛaałačiƛ*	ʔaƛaatu	ʔaƛṗit	ʔaƛḥtačiƛ	ʔaaƛapuƛ
	qacċaałačiƛ*	qacċaatu	qacċuṗit	qacċaḥtačiƛ	qaacċapuƛ
	muuʔałačiƛ*	muuʔatu	muuṗit	muuḥtačiƛ	muupuƛ