Chapter 12. Numbers in Nwehu Nuswei

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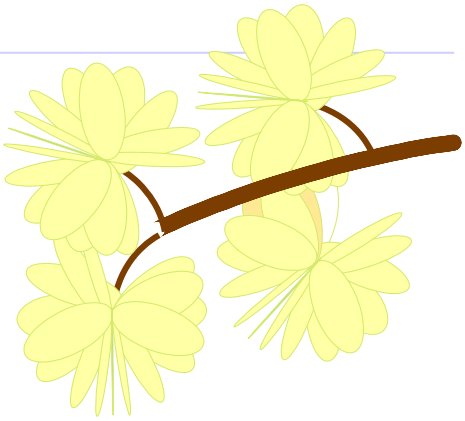
12.1. Counting



Counting can be done in Nwehu Nuswei either using the language's native base 16 system, or the more familiar base 10. Two sets of 256-word GENI (𐑣𐑤-- *Ti*-- and 𐑣𐑮-- *Ta*--) are set aside for basic counting, and additional words are made available to express larger numbers, negatives, fractions, and special numbers used in mathematics. Note that "Qualitative Concepts" are related and begin with 𐑣𐑯- *Te*- but are discussed in their own chapter, "Love and Hate".

12.1.1. Basic Numbers

- Basic **hexadecimal** numbers 0-255 are the GENUS beginning 𐑣𐑤- *Ti*-
- Basic **decimal** numbers 0-100 are are the GENUS beginning 𐑣𐑮- *Ta*-, but forms ending -𐑢 *-we* through -𐑜 *-woi* and 𐑣𐑮𐑤 *Tati* through 𐑣𐑮𐑧𐑜 *Tabwoi* are defined as 'meaningless'. Undefined forms 𐑣𐑮𐑤 – *Tati* through 𐑣𐑮𐑧𐑜 *Tabwoi* may be used for other concepts, but all forms 𐑣𐑮𐑦𐑤 *Tahi* through 𐑣𐑮𐑪𐑜 *Tacwoi* are reserved to prevent ambiguity.
- **Negative** numbers are indicated with a 𐑪 *w* in the first vowel of the basic numbers: GENI 𐑣𐑪-- *Twi*-- and 𐑣𐑭-- *Twa*--.
- Basic **negative decimal** numbers -1 through -100 are are the series beginning 𐑣𐑭- *Twa*-, with forms ending -𐑢 *-we* through -𐑜 *-woi* and 𐑣𐑭𐑤 *twati* through 𐑣𐑭𐑣𐑜 *twatwoi* are undefined, as in the positive numbers. Similarly, undefined forms 𐑣𐑭𐑤 *twati* – 𐑣𐑭𐑧𐑜 *twabwoi* may be used for other concepts, but all forms 𐑣𐑭𐑦𐑤 *twahi* through 𐑣𐑭𐑪𐑜 *twacwoi* are reserved to prevent ambiguity.

12.1.1.1. Hexadecimal Numbers – Base 16

Because NN is based on hexadecimal numbers, the "native" way of counting is in base 16. (𐑛𐑞 12.1)

0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
tihu	tihi	tihe	tihei	tiha	tihai	tiho	tihoi	tihw	tihwi	tihwe	tihwei	tihwa	tihwai	tihwo	tihwoi
10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
tixu	tixi	tixe	tixei	tixa	tixai	tixo	tixoi	tixw	tixwi	tixwe	tixwei	tixwa	tixwai	tixwo	tixwoi
20	21	22	23	24	25	26	27	28	29	2A	2B	2C	2D	2E	2F
tisu	tisi	tise	tisei	tisa	tisai	tiso	tisoi	tisw	tiswi	tiswe	tiswei	tiswa	tiswai	tiswo	tiswoi
30	31	32	33	34	35	36	37	38	39	3A	3B	3C	3D	3E	3F

tifu	tifi	tife	tifei	tifa	tifai	tifo	tifoi	tifw	tifwi	tifwe	tifwei	tifwa	tifwai	tifwo	tifwoi
40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F
tiru	tiri	tire	tirei	tira	tirai	tiro	tiroi	tirw	tirwi	tirwe	tirwei	tirwa	tirwai	tirwo	tirwoi
50	51	52	53	54	55	56	57	58	59	5A	5B	5C	5D	5E	5F
tiyu	tiyi	tiye	tiyei	tiya	tiyai	tiyo	tiyoi	tiyw	tiywi	tiywe	tiywei	tiywa	tiywai	tiywo	tiywoi
60	61	62	63	64	65	66	67	68	69	6A	6B	6C	6D	6E	6F
tinu	tini	tine	tinei	tina	tinai	tino	tinoi	tinw	tinwi	tinwe	tinwei	tinwa	tinwai	tinwo	tinwoi
70	71	72	73	74	75	76	77	78	79	7A	7B	7C	7D	7E	7F
timu	timi	time	timei	tima	timai	timo	timoi	timw	timwi	timwe	timwei	timwa	timwai	timwo	timwoi
80	81	82	83	84	85	86	87	88	89	8A	8B	8C	8D	8E	8F
tiku	tiki	tike	tikei	tika	tikai	tiko	tikoi	tikw	tikwi	tikwe	tikwei	tikwa	tikwai	tikwo	tikwoi
90	91	92	93	94	95	96	97	98	99	9A	9B	9C	9D	9E	9F
ticu	tici	tice	ticei	tica	ticai	tico	ticoi	ticw	ticwi	ticwe	ticwei	ticwa	ticwai	ticwo	ticwoi
A0	A1	A2	A3	A4	A5	A6	A7	A8	A9	AA	AB	AC	AD	AE	AF
titu	titi	tite	titei	tita	titai	tito	titoi	titw	titwi	titwe	titwei	titwa	titwai	titwo	titwoi
B0	B1	B2	B3	B4	B5	B6	B7	B8	B9	BA	BB	BC	BD	BE	BF
tipu	tipi	tipe	tipei	tipa	tipai	tipo	tipoi	tipw	tipwi	tipwe	tipwei	tipwa	tipwai	tipwo	tipwoi
C0	C1	C2	C3	C4	C5	C6	C7	C8	C9	CA	CB	CC	CD	CE	CF
tigu	tigi	tige	tigei	tiga	tigai	tigo	tigoi	tigw	tigwi	tigwe	tigwei	tigwa	tigwai	tigwo	tigwoi
D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	DA	DB	DC	DD	DE	DF
tiju	tiji	tije	tijei	tija	tijai	tijo	tijoi	tijw	tijwi	tijwe	tijwei	tijwa	tijwai	tijwo	tijwoi
E0	E1	E2	E3	E4	E5	E6	E7	E8	E9	EA	EB	EC	ED	EE	EF
tidu	tidi	tide	tidei	tida	tidai	tido	tidoi	tidw	tidwi	tidwe	tidwei	tidwa	tidwai	tidwo	tidwoi
F0	F1	F2	F3	F4	F5	F6	F7	F8	F9	FA	FB	FC	FD	FE	FF
tibu	tibi	tibe	tibei	tiba	tibai	tibo	tiboi	tibw	tibwi	tibwe	tibwei	tibwa	tibwai	tibwo	tibwoi

𝔇ρ 12.1: Basic hexadecimal numbers

12.1.1.2. Decimal Numbers – Base 10

Since most people are far more accustomed to base 10 numbers, GENUS אתּ-- *ta*-- is entirely dedicated to decimal numbers from 0 to 99. All are shown in 𝔇ρ 12.2. In order to avoid confusion, the 156 unused words in this genus are permanently defined as "meaningless".

0	1	2	3	4	5	6	7	8	9
tahu	tahi	tahe	tahei	taha	tahai	taho	tahoi	tahw	tahwi
10	11	12	13	14	15	16	17	18	19

taxu	taxi	taxe	taxei	taxa	taxai	taxo	taxoi	taxw	taxwi
20	21	22	23	24	25	26	27	28	29
tasu	tasi	tase	tasei	tasa	tasai	taso	tasoi	tasw	taswi
30	31	32	33	34	35	36	37	38	39
tafu	tafi	tafe	tafei	tafa	tafai	tafo	tafoi	tafw	tafwi
40	41	42	43	44	45	46	47	48	49
taru	tari	tare	tarei	tara	tarai	taro	taroi	tarw	tarwi
50	51	52	53	54	55	56	57	58	59
tayu	tayi	taye	tayei	taya	tayai	tayo	tayoi	tayw	taywi
60	61	62	63	64	65	66	67	68	69
tanu	tani	tane	tanei	tana	tanai	tano	tanoi	tanw	tanwi
70	71	72	73	74	75	76	77	78	79
tamu	tami	tame	tamei	tama	tamai	tamo	tamoi	tamw	tamwi
80	81	82	83	84	85	86	87	88	89
taku	taki	take	takei	taka	takai	tako	takoi	takw	takwi
90	91	92	93	94	95	96	97	98	99
tacu	taci	tace	tacei	taca	tacai	taco	tacoi	tacw	tacwi

𝔇ρ 12.2: Basic decimal numbers

12.1.2. Additional Number-Bases

Not to slight any other potential ways of counting, NN offers words for numbers based on several bases.

- *Tux-* 𐑣𐑦𐑤 Names for **number bases**: base 2 through base 16
- *Twe-* 𐑣𐑢 **Non-Integer** Number Bases:
  - *Tweh-* → *Twef-* 𐑣𐑢𐑦- → 𐑣𐑢𐑩𐑤- Numbers base Pi π (nπ)
  - *Twer-* → *Twem-* 𐑣𐑢𐑮- → 𐑣𐑢𐑩𐑥- Numbers base Phi φ (nφ)
  - *Twek-* → *Twep-* 𐑣𐑢𐑭- → 𐑣𐑢𐑪𐑤- Numbers base square root of two (√2)
  - *Tweg-* → *Tweb-* 𐑣𐑢𐑜- → 𐑣𐑢𐑪𐑚- Numbers base e (ne)

12.2. Multipliers and Dividers

To extend the basic numbers, NN provides several sets of exponents to serve as multipliers and dividers of the basic numbers. (𝔇ρ 12.3)

First syllable	IPA	NN	Semantics
Teih-	tɛjh	𞤑𞤤ᴵ	Powers of 2 (1 to 7, -1 to -8)
Teix-	tɛjʃ	𞤑𞤤ᴸ	Powers of 2 (8 to 15, -9 to -16)
Teis-	tɛjs	𞤑𞤤ᵻ	Powers of 10 (1 to 7, -1 to -8)
Teif-	tɛjf	𞤑𞤤ᵼ	Powers of 10 (8 to 15, -9 to -16)
Teir-	tɛjɹ	𞤑𞤤ᵀ	Powers of 16 (1 to 7, -1 to -8)
Teiy-	tɛjʒ	𞤑𞤤ᴆ	Powers of 16 (8 to 15, -9 to -16)
Tein-	tɛjn	𞤑𞤤ᵻ	Powers of e (1 to 7, -1 to -8)
Teim-	tɛjm	𞤑𞤤ᵯ	Powers of e (8 to 15, -9 to -16)
Teik-	tɛjk	𞤑𞤤ᵑ	Powers of i (1 to 7, -1 to -8)
Teic- to Teib-			(undefined)

Ɗᵽ 12.3: Number multipliers and dividers

Each of these GENI is organized in the same way. 𞤑𞤢ᴵ- *Teih-* is given as an example in Ɗᵽ 12.4:

Roman	IPA	NN	Meaning	Value
teihu	tɛj'hə	𞤑𞤢ᴵᵻ	Powers of 2	
teihi	tɛj'hi	𞤑𞤢ᴵᑌ	2 ^ 1	2
teihe	tɛj'he	𞤑𞤢ᴵᑦ	2 ^ 2	4
teihei	tɛj'hɛj	𞤑𞤢ᴵᑲ	2 ^ 3	8
teiha	tɛj'ha	𞤑𞤢ᴵᑭ	2 ^ 4	16
teihai	tɛj'haj	𞤑𞤢ᴵᑘ	2 ^ 5	32
teiho	tɛj'hɔ	𞤑𞤢ᴵᑯ	2 ^ 6	64
teihoi	tɛj'hɔj	𞤑𞤢ᴵᑿ	2 ^ 7	128
teihw	tɛj'hu	𞤑𞤢ᴵᑫ	2 ^ -1	0.50000000
teihwi	tɛj'hwi	𞤑𞤢ᴵᑓ	2 ^ -2	0.25000000
teihwe	tɛj'hwe	𞤑𞤢ᴵᑱ	2 ^ -3	0.12500000
teihwei	tɛj'hwɛj	𞤑𞤢ᴵᑴ	2 ^ -4	0.06250000
teihwa	tɛj'hwa	𞤑𞤢ᴵᑬ	2 ^ -5	0.03125000
teihwai	tɛj'hwaj	𞤑𞤢ᴵᑒ	2 ^ -6	0.01562500
teihwo	tɛj'hwɔ	𞤑𞤢ᴵᑰ	2 ^ -7	0.00781250
teihwoi	tɛj'hwɔj	𞤑𞤢ᴵᑾ	2 ^ -8	0.00390625

Ɗᵽ 12.4: Illustration of how multipliers and dividers work

Words beginning with 𐑣𐑤𐑩- *Tei-* express powers of 2, 10, 16, e, and i (𐑛𐑞 12.5 below). They can be used combined with the basic numbers. If the basic number precedes the 𐑣𐑤𐑩- *Tei-* word, their values are multiplied; if the basic number follows the 𐑣𐑤𐑩- *Tei-* word, the values are added.

12.2.1.1. Examples

𐑛𐑞 12.5: Fractions and compounds

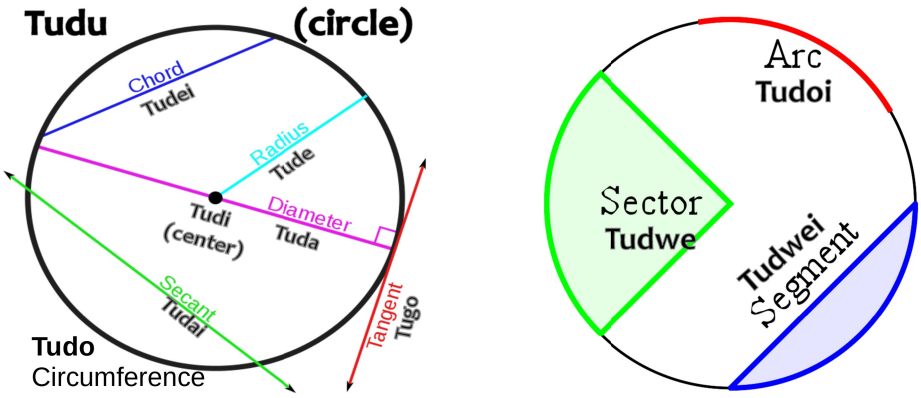
Larger Numbers			
𐑣𐑟𐑨𐑟	*Tafa*	34	‘thirty-four’
𐑣𐑟𐑒𐑝	*Tayo*	56	‘fifty-six’
𐑣𐑦𐑨𐑛 𐑣𐑟𐑨𐑟	*Teise tafa*	134	‘one hundred plus thirty-four’ or ‘hundred thirty-four’
𐑣𐑟𐑨𐑟 𐑣𐑦𐑨𐑛	*Tafa teise*	3400	‘thirty-four times one hundred’, or
			‘thirty-four hundred’, or
𐑣𐑟𐑰𐑤 𐑣𐑦𐑨𐑤 𐑣𐑟𐑰𐑟 𐑣𐑦𐑨𐑛	*Tahei teisei taha teise*	3,400	‘three thousand four hundred’
𐑣𐑟𐑰𐑤 𐑣𐑦𐑨𐑤 𐑣𐑟𐑰𐑟 𐑣𐑦𐑨𐑛 𐑣𐑟𐑒𐑝	*Tahei teisei taha teise tayo*	3,456	‘three thousand four hundred fifty-six’
Base 10 Fractional Numbers			
𐑣𐑤𐑨𐑪	*Teisw*	0.1	‘one tenth’
𐑣𐑤𐑨𐑰	*Teiswi*	0.01	‘one one hundredth’
𐑣𐑟𐑨𐑟 𐑣𐑤𐑨𐑪	*Tafa teisw*	3.4	‘34 times 0.1’
𐑣𐑟𐑨𐑟 𐑣𐑤𐑨𐑰	*Tafa teiswi*	0.34	‘34 times 0.01’
𐑣𐑤𐑨𐑰 𐑣𐑟𐑨𐑟	*Teiswi tafa*	34.01	‘0.01 plus 34’
𐑣𐑟𐑒𐑝 𐑣𐑤𐑨𐑪𐑛 𐑣𐑟𐑨𐑟	*Tayo teiswe tafa*	34.56	‘56 times 0.01 plus 34’
In larger numbers with decimal fractions, the fractional part is introduced by a basic number. This results in two adjacent basic numbers, resulting in the addition of the clusters of basic and multiplier (see next example)			
𐑣𐑟𐑰𐑛 𐑣𐑤𐑦𐑛 𐑣𐑟𐑨𐑟 𐑣𐑟𐑒𐑝 𐑣𐑤𐑨𐑰	Tahe teise tafa tayo teiswi	234.56	‘two hundred thirty-four point five six’, or (2 * 100 + 34) + (56 * 0.01)

12.3. General Number and Measurement Concepts

SPECIES 𐑣𐑵-- *Tu*-- provides representation of a wide variety of concepts related to numbers and measurements. Each is discussed briefly in this section.

- Tuh- təh 𐑣𐑵𐑦 **Types of Numbers**: not yet defiined.
- Tux- təʃ 𐑣𐑵𐑤 **Number bases**: base 2 through base 16

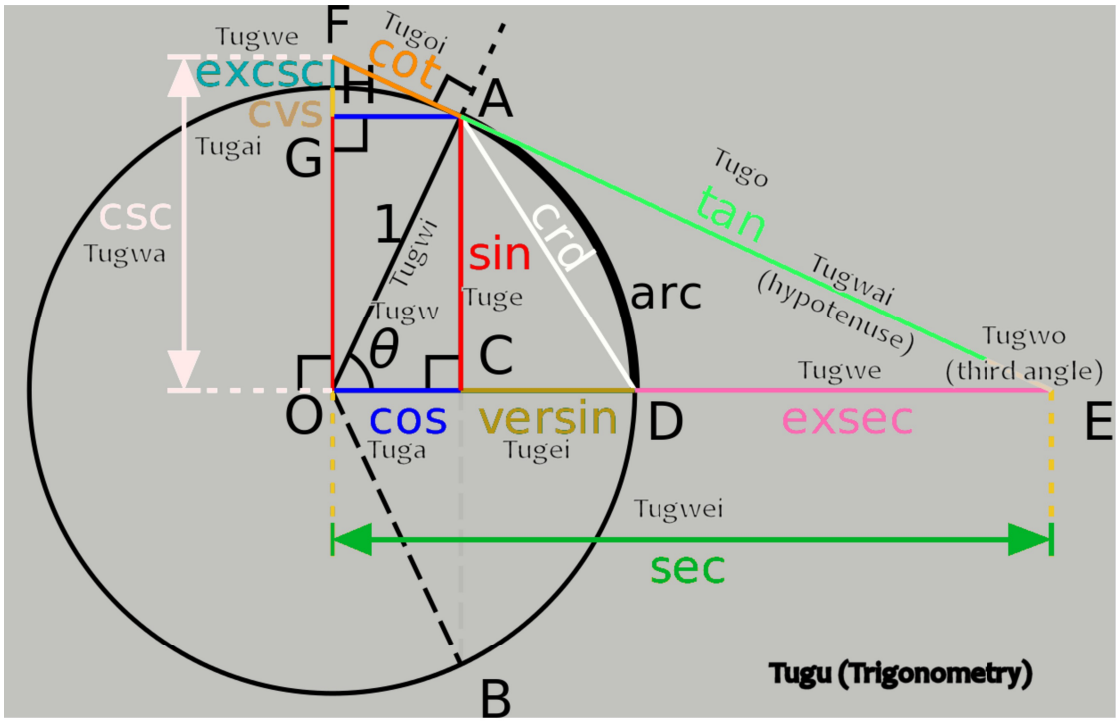
- Tus- təs 𐤊𐤕𐤎 **Branches of Mathematics:**
  Several theoretical and applied areas are defined
- Tun- tən 𐤊𐤕𐤍 **Algebraic Concepts:** not yet defined
- Tuk- tək 𐤊𐤕𐤊 **Geometry:** not yet defined
- Tud- təd 𐤊𐤕𐤃 **Circles:** measurements for circles (𝔇ρ 12.6)



𝔇ρ 12.6: Circle terms

- Tuj- təʤ 𐤊𐤕𐤉 **Calculus:** not yet defined
- Twai- twaj 𐤊𐤅- **Constants:** Pi, e, Square root of -1, etc.: not yet defined

- Tug- təg ᛯᛏᛉ **Trigonometry**: 𝒟ρ 12.7 illustrates the basic concepts of Trig and their NN equivalents:



𝒟ρ 12.7: Trigonometry terms

- Tuf- təf ᛯᛏᛣ **Whole and Parts**: Words in the ᛯᛏᛣ *Tuf-* SPECIES refer to functional and structural aspects of an object's parts. In case the size of an object's parts is of interest, the usual three size-ranges are provided (small, mid, large). Beyond very simple objects, most things are composed of assemblies of smaller parts, which form "systems". A "system" is collection of parts combined in such a way as to produce a desired result. ᛯᛏᛣᛚ *Tufi* indicates a basic component, regardless of size; or small: ᛯᛏᛣᛞ *tufei*, mid-size: ᛯᛏᛣᛈ *tufai*, or large: ᛯᛏᛣᛟ *tufoi*. In most cases, the basic elements ᛯᛏᛣᛚ *tufi*, are combined into sub-systems ᛯᛏᛣᛩ *tufwi*, which in turn combine to make systems, ᛯᛏᛣᛋ *tufw*. At each system-level, it is possible to add a vowel to indicate relative size (as illustrated above with *tufi*). Viewed as a collection of parts or as a system of systems, an object as a whole can be referred to as ᛯᛏᛣᛯ *Tufwo*.
- Tur- təɹ ᛯᛏᛚ **Mathematical Operations**
  - Add: ᛯᛏᛚᛚ *turi*
  - Multiply: ᛯᛏᛚᛇ *ture*
  - Raise to a power: ᛯᛏᛚᚹ *tura*
  - Divide: ᛯᛏᛚᛇᛈ *turo*
  - Negation: ᛯᛏᛚᛋ *turw*
  - Subtract: ᛯᛏᛚᛩ *turwi*
  - Numeric root: ᛯᛏᛚᛯ *turwa*
  - Negative power: ᛯᛏᛚᛯᛈ *turwo*

- Mathematics (the field of study): ꓘꓤꓡꓤ *turu*

- Tuy- təʒ ꓘꓤꓒ **Logic Operations**: A logical operation is ꓘꓤꓒꓤ *tuyu*, and 15 logical operations are defined from ꓘꓤꓒꓵ *tuyi* through ꓘꓤꓒꓱꓵ *tuywoi*:
  - → Material condition 'imply': ꓘꓤꓒꓵ *tuyi*
  - ⊤ Truth 'tautology': ꓘꓤꓒꓶ *tuye*
  - ∃ 'there exists': ꓘꓤꓒꓷ *tuyei*
  - ∧ Conjunction 'and': ꓘꓤꓒꓠ *tuya*
  - ∀ 'for all': ꓘꓤꓒꓭ *tuyai*
  - ∨ Disjunction 'or': ꓘꓤꓒꓶꓠ *tuyo*
  - ↮ Exclusive or: ꓘꓤꓒꓷꓱ *tuyoi*
  - ¬ Negation 'not': ꓘꓤꓒꓹ *tuyw*
  - ← Converse implication 'if': ꓘꓤꓒꓺ *tuywi*
  - ⊥ Falsity, contradiction: ꓘꓤꓒꓻ *tuywe*
  - ↔ Biconditional 'if and only if': ꓘꓤꓒꓷꓱ *tuywei*
  - ↛ material nonimplication 'but not': ꓘꓤꓒꓽ *tuywa*
  - ↑ Alternative denial 'not both': ꓘꓤꓒꓱ *tuywai*
  - ↓ Joint denial 'neither nor': ꓘꓤꓒꓼ *tuywo*
  - ∅ Absurd (not standard logical operator): ꓘꓤꓒꓱꓵ *tuywoi*
- Tum- təm ꓘꓤꓠ **Size Ranges**: "Size range" in this context indicates the relative size of objects or entities. The purpose of having such words in NN is to allow people to talk about imprecise sizes while giving an idea of the scale. The English words "large" and "small" have meaning only if the context is known: a "large rabbit" and a "large man" are are not close to the same size. Words in this SPECIES can be used either to indicate a general range, or as a modifier to qualify words indicating relative size ꓘꓤꓚ- *Tup-* or quantity ꓘꓤꓔ- *Tub-*, like "big" or "small". Sizes range from 'below sub-atomic scale' through 'human scale' to 'universal, relative to creation as we know it'.
- Tup- təp ꓘꓤꓚ **Comparative Sizes**: these words are used within a size-range to indicate wihere within that range something fits.
- Tub- təb ꓘꓤꓔ **Comparative Quantities**: these words work for quantity just like "comparative sizes" work.
- Tuc- təʃ ꓘꓤꓴ **Basic shapes**: not yet defined. These are intended to represent geometric shapes, but see also ꓶꓤꓚ- *Hup-* shape classifier FUNCTIONALS, which are for intuitive classification rather than use in geometry.

- Tud- təd ꓘɪꓘ **Circle parts and measurements**: Ꝺρ 11.2 illustrates the words for describing circles.

- Tut- tət ꓘɪꓘ **Dimensions:** not yet defined

12.4. Measurements

12.4.1. General Measurements

GENUS ꓘꝕ- *Two-* represents useful length, weight/mass, volume, and speed measurements.

As the basis for its measurements, NN uses the SI – "Système International" (meter, liter, gram – these are the units accepted throughout most of the world) but provides words for "English units", used in the US and (to some extent still) in the UK. Vocabulary is also set aside for measures in other systems as well.

The "native" measurements within NN provide units of each measurement (meter, liter, gram) that increase and decrease by 16, rather than by 10 as in the standard metric system. NN words for the base 10 measures are, of course, provided as well.

Speed is measured in units of *length per unit of time*. Metric and English are both based on the standard second, but NN's time measurement system is based on sixteenths of a day (§12.5 below). Thus separate SPECIES are required for speeds based on standard time units and NN time units.

Finally, NN offers three SPECIES for discussion of astronomical measurements. The first two are based on the Astronomical Unit (AU: 149.6 million kilometers, the mean distance from the center of the earth to the center of the sun) while the third expresses measures in Paralax Units (Parsecs: .648000/π*au, or approximately $3.0856775814913673 \times 10^{16}$ meters).

Ꝺρ 12.8 below presents the GENUS ꓘꝕ- *Two-*:

Roman	IPA	NN	Semantics
twoh-	twəh	𞤊𞤢𞤤	Length – Nwehu Nuswei SI Hexadecimal units
twox-	twəʃ	𞤊𞤢𞤣	Length – SI (Système International)
twos-	twəs	𞤊𞤢𞤥	Length – English units
twof-	twəf	𞤊𞤢𞤦	Length and Speed – other units
twor-	twəɹ	𞤊𞤢𞤧	Weight/Mass – native Nwehu Nuswei units
twoy-	twəʒ	𞤊𞤢𞤨	Weight/Mass – SI (Système International)
twon-	twən	𞤊𞤢𞤩	Weight/Mass – English units
twom-	twəm	𞤊𞤢𞤪	Weight/Mass – other units
twok-	twək	𞤊𞤢𞤫	Volume – native Nwehu Nuswei units
twoc-	twəʧ	𞤊𞤢𞤬	Volume – CGPM (metric)
twot-	twət	𞤊𞤢𞤭	Volume – English units
twop-	twəp	𞤊𞤢𞤮	Length – Nwehu Nuswei AU-based units
twog-	twəg	𞤊𞤢𞤯	Length – Astronomical Units (AU)
twoj-	twəʤ	𞤊𞤢𞤰	Length – Paralax Units (Parsecs)
twod-	twəd	𞤊𞤢𞤱	Speed – Nwehu Nuswei SI Hex + Hex Time units
twob-	twəb	𞤊𞤢𞤲	Speed – Newhu Nuswei AU-based units

𝒟ₚ 12.8: Length, weight, volume, speed

12.4.2. Measure of Energy, Waveforms

GENUS 𞤊𞤣 *Twoi-* is to represent "Measures of Energy, Waveforms"; further measures of physical and chemical phenomena may be represented in the K- and G- families, but none of these have yet been defined.

12.5. Time

12.5.1. Time Concepts

Like most other time measurement systems, NN begins with the rotation of the earth and its revolution around the sun. Vocabulary space is also provided for planets with other rotation / revolution times, and for situations where the night-day distinction is not relevant. Vocabulary for the currently-standard time measurement system is also provided, of course.

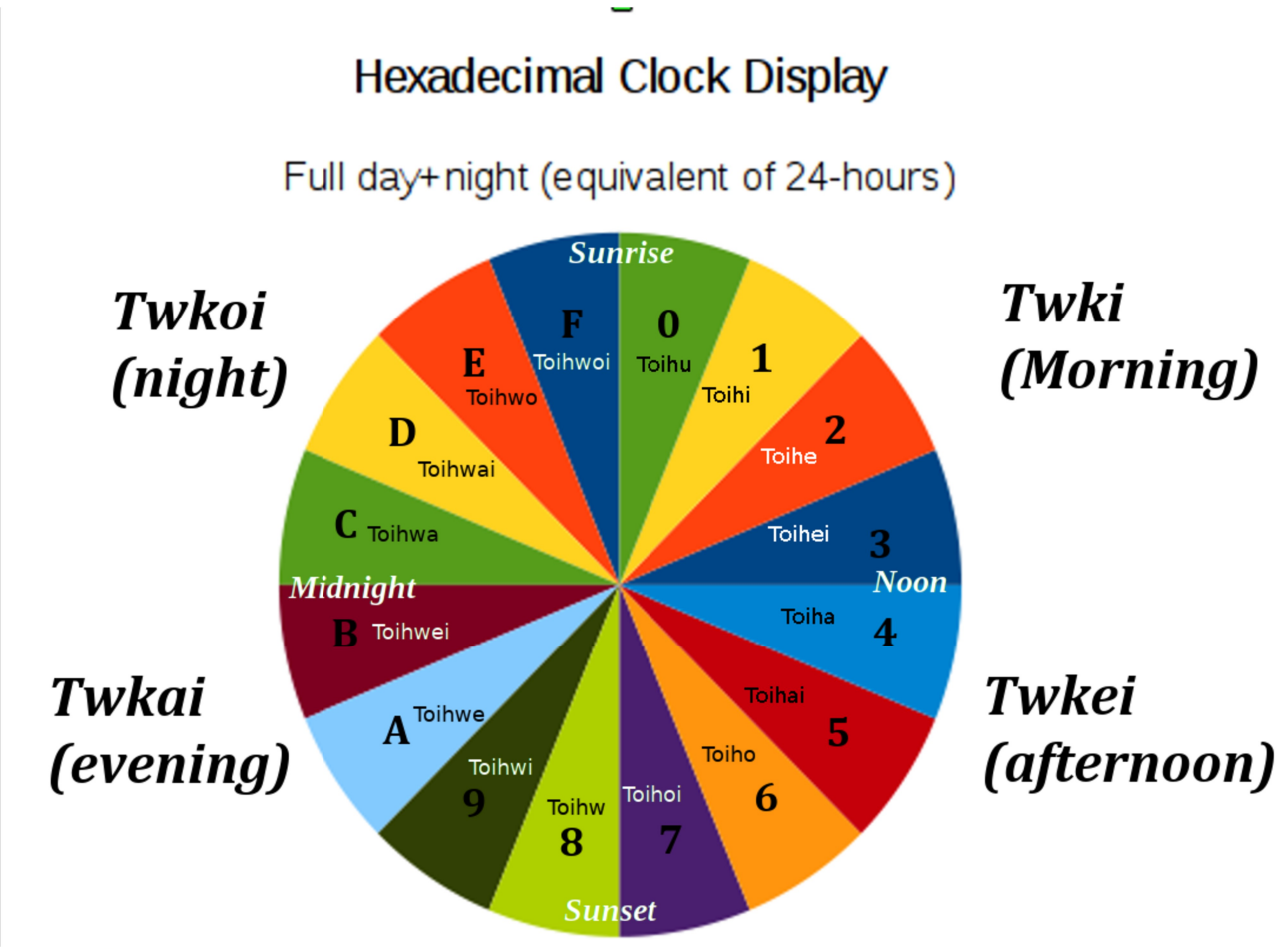
12.5.1.1. Time: Larger Units

Genus 𐤊𐤃-- *To*-- represents years and multiples of years, seasons, Gregorian months, lunar months, and standard weekday names. In addition, several NN calendar day-names in groups from 3 to 16 days, plus festivals and half-months are represented. The NN calendar system is complex and offers several options for dividing the year into groups, so the calendar is discussed in its own chapter, 13.

12.5.1.2. Time: Smaller Units

Divisions of time within a day are represented in genus 𐤊𐤄-- *Toi*--. The standard 24-hour day with 60 minutes per hour and 60 seconds per minute are each given a name (𐤄𐤒 12.9). So to refer to 9 a.m., the single word 𐤊𐤄𐤊𐤓𐤇 *toinwe* can be used (𐤊𐤖𐤉𐤇 *tihwe* is 9_{16} and 𐤊𐤉𐤉𐤇 *tahwe* is 9_{10}).

Beginning with sunrise, the "native" NN day is divided into 16 units, each of which is divided into 16 smaller units (𐤄𐤒 12.9).



𝒟ₚ11.3: Nwehu Nuswei 16-hour clock

Each of these units is further subdivided into sixteenths, down to 𐑑𐑴𐑮𐑢𐑴𐑲 *toirwoi* which is approximately 2.927345865710 86E-16 of a standard second.

Discussion of numbers and measurements in Nwehu Nuswei continues in Chapter 13 with the Calendar.