

Universal Multiple-Octet Coded Character Set
International Organization for Standardization
Organisation Internationale de Normalisation
Международная организация по стандартизации

Doc Type: Working Group Document**Title: Revised proposal for encoding the SignWriting script in the SMP of the UCS****Source: Michael Everson, Stephen Slevinski, and Valerie Sutton****Status: Individual Contribution****Action: For consideration by JTC1/SC2/WG2 and UTC****Date: 2011-08-05****Replaces: N4015**

1. Introduction. SignWriting is a script developed in 1974 by Valerie Sutton, the inventor of Sutton Movement Writing, who two years earlier had developed DanceWriting. SignWriting is a featural script, its glyphs being visually iconic as well as in their spatial arrangement in text, which represents a sort of snapshot of any given sign. SignWriting is currently being used to write the following Sign Languages:

American Sign Language (in USA, English-speaking Canada)	Japanese Sign Language
Arabian Sign Languages	Malawi Sign Language
Australian Sign Language	Malaysian Sign Language
Bolivian Sign Language	Maltese Sign Language
Brazilian Sign Language	Mexican Sign Language
British Sign Language	Nepalese Sign Language
Catalan Sign Language	New Zealand Sign Language
Colombian Sign Language	Nicaraguan Sign Language
Czech Sign Language	Norwegian Sign Language
Danish Sign Language	Peruvian Sign Language
Dutch Sign Language	Philippines Sign Language
Ethiopian Sign Language	Polish Sign Language
Finnish Sign Language	Portugese Sign Language
Flemish Sign Language	Québec Sign Language
French-Belgian Sign Language	South African Sign Language
French Sign Language	Spanish Sign Language
German Sign Language	Swedish Sign Language
Greek Sign Language	Swiss Sign Language
Irish Sign Language	Taiwanese Sign Language
Italian Sign Language	Tunisian Sign Language

A variety of literature exists in SignWriting. Much of it is lexical in nature (Sign Language dictionaries), but many longer texts, (such as the Gospels of Matthew, Mark, and John in American Sign Language) also exist (see www.signwriting.org/library/history/publications). It is estimated that there are thousands of publications in SignWriting, whether in ASL, or German Sign Language, Nicaraguan Sign Language, and so on.

2. Structure. The fundamental writing unit of SignWriting is called a “symbol”, which in UCS terms is “character”. The basic characters represent handshapes, facial expressions, and various indications of motion and contact. No single Sign Language uses all of the characters available in the SignWriting repertoire; some handshapes are distinctive in some Sign Languages while allophonic in others. Graphically, SignWriting characters are combined spatially on two-dimensional canvases to form individual “signs” (roughly equivalent to “words”). This spatial organization is *spelling* and is an essential part of the writing system.

Computer processing of SignWriting has been possible for many years, beginning with the SignWriter program which was in use from 1985 to 2004 (and continues to be used in some countries today). SignPuddle has been the world standard for SignWriting software from 2004 to present. In terms of UCS encoding, two main stages will be required. The first stage (represented in this proposal) is simpler: the encoding of the basic characters. These are simply graphic characters, proposed to be encoded in Plane 1. The second stage will deal with the spatial organization of SignWriting characters. The latter are anticipated to be encoded as control characters specific to SignWriting, probably in Plane 14. Currently, software developers for SignWriting use a variety of mechanisms to achieve spatial organization; research is ongoing to determine what the optimum mechanism is, in terms of accuracy and economy.

3. Character repertoire. The largest group of graphic characters used in SignWriting represent 261 handshapes. There are also 250 motion and contact characters, 110 head and face characters, 26 body and location characters, 5 punctuation marks, and 20 characters which indicate “fill” and “rotation”.

4. Fill and rotation characters. These characters are somewhat analogous to the “shifter” characters proposed for Miao vowels in N3789 (“Final proposal for encoding the Miao script in the SMP of the UCS”). It is easiest to describe this in terms of the handshapes. A “fill” in SignWriting indicates the relative position of a handshape as the signer (or writer of SignWriting) views his or her hand. A black fill indicates that the back of the hand is viewed by the signer; a white fill indicates that the palm of the hand is viewed by the signer; and a half-fill indicates that the side of the hand is viewed by the signer. There are three fills which indicate when the hand is in a vertical plane (parallel to a wall) and three which indicate when the hand is in a horizontal plane (parallel to the floor).



Figure 1. An example showing SIGNWRITING HAND-FLAT handshape with various fills.













		Palm of Hand Front View Parallel Wall Plane
		Side of Hand Front View Parallel Wall Plane
		Back of Hand Front View Parallel Wall Plane
		Palm of Hand Top View Parallel Floor Plane
		Side of Hand Top View Parallel Floor Plane
		Back of Hand Top View Parallel Floor Plane

Figure 2. An example of SIGNWRITING HAND-FIST INDEX with various fills.

A “rotation” indicates one of sixteen positions a handshape can appear in. Rotation is also the means used to distinguish a left-hand character from a right-hand character.





















































































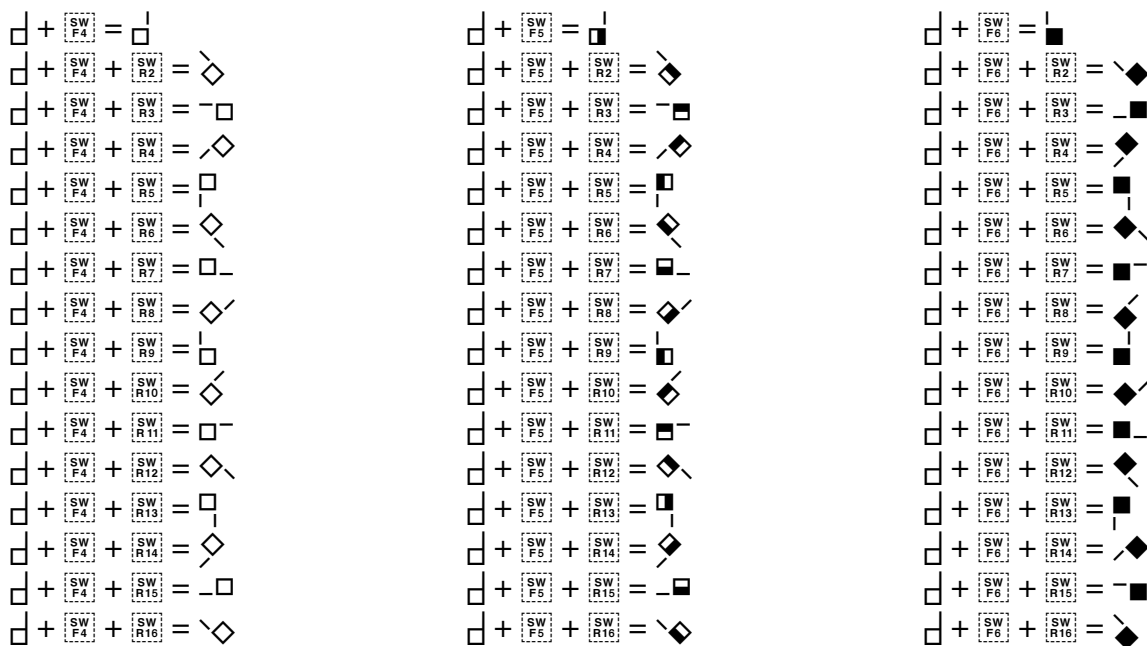
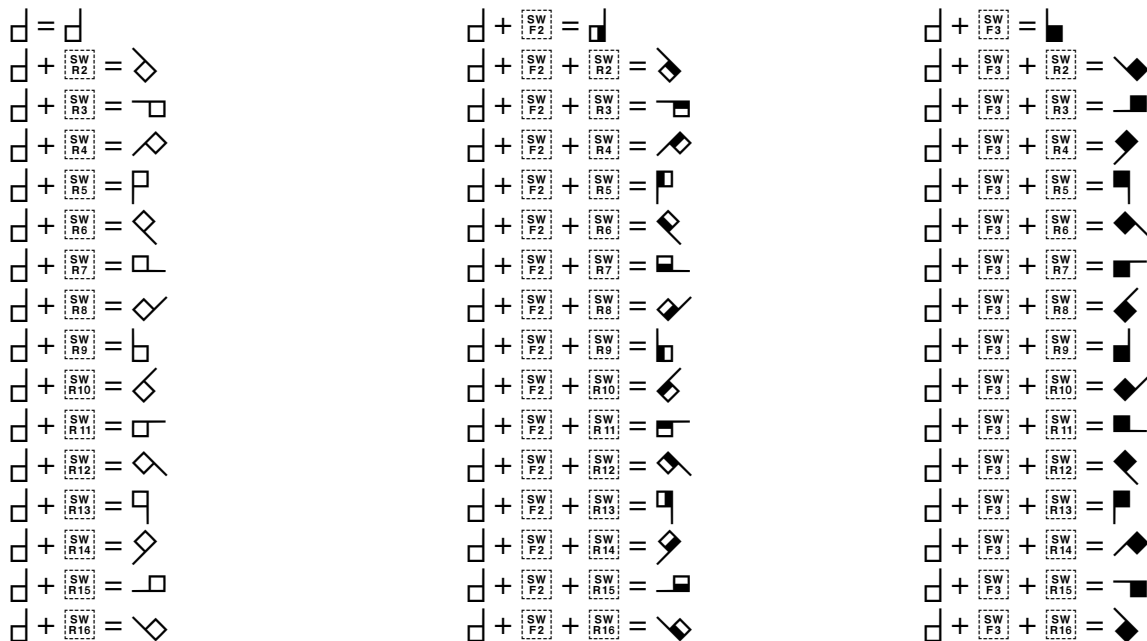
					
					
					
					
					
					
					
					
					
					
					
					
					
					

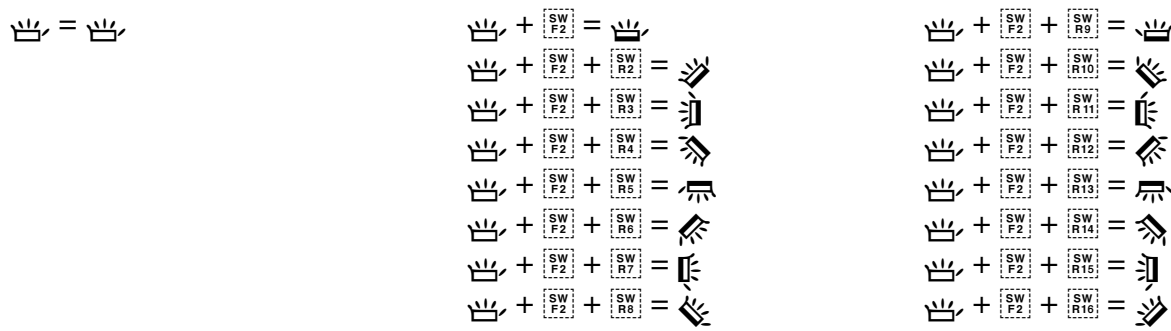
Figure 3. An example of SIGNWRITING HAND-FIST INDEX with all of the fills and rotations.

Thus it can be seen that a given handshape may have 96 different realizations. This is somewhat analogous to the letter *e* which serves as a base character but may be modified by various diacritical

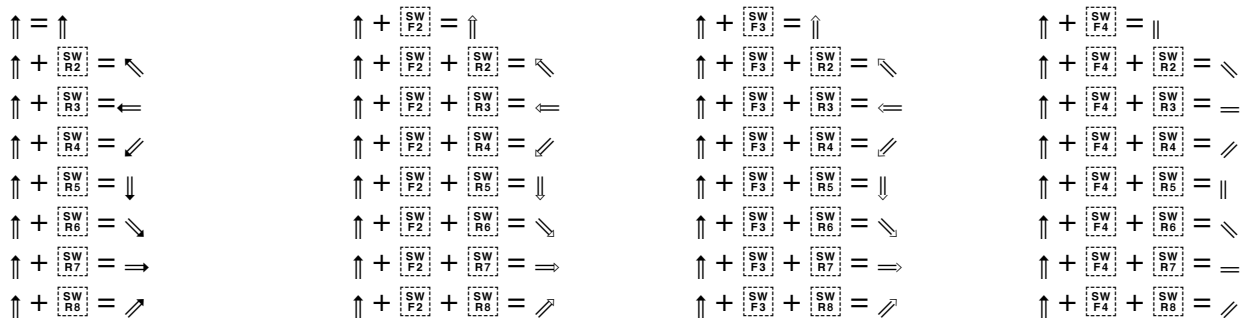
marks, as in *é è ê ë ě ě ě ě* etc. In order to economize on code positions and to preserve the underlying index-hand character identity, fill and rotation is accomplished by following a base character with one of 5 fill characters and one of 15 rotation characters. Note that Fill-1 and Rotation-1 are inherent in the base character.



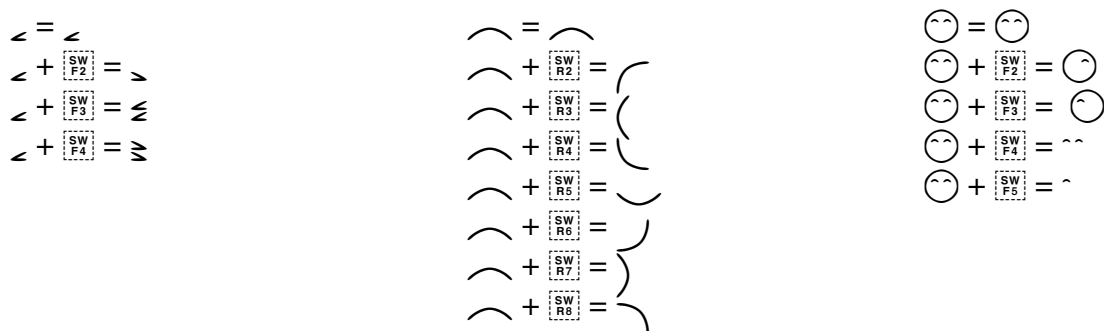
A font implementation which does not have support for fill and rotation should simply display \square_{SW_7} or $\square_{\text{SW}_2 \text{ SW}_7}$ or $\square_{\text{SW}_3 \text{ SW}_7}$. Note that there are some combinations which do not occur. In the example here, note that the handshape with (inherent) Fill 1 has no rotations as it does not occur in any sign language.



These arrows do not have the “handedness” of the handshakes, so they take only 8 rotations, and require only 4 fills.



The fast tempo signs in the left column below have neither “rotations” nor “fills” but Fill characters are used to select their shapes. The slow tempo signs in the centre column have no fills, but do have rotations. Headshapes like the one shown in the right column, cannot take (for example) Rotation 5 because it is physiologically impossible.



A complete list of valid and invalid sequences of base character, fill character, and rotation character, is given in a file at <http://www.evertype.com/standards/iso10646/pdf/signwritingsequences.txt>

5. Fills and Rotations in current implementations. SignWriting has employed “triplets” of Base + Fill + Rotation since the “SignWriter” computer program (written by Richard Gleaves for the Apple IIe in 1985–1986 and later ported to DOS); are still used in the SignPuddle software presently maintained by Stephen E. Slevinski Jr. Although various methods of representing the triplets in data were used depending on platform, the data structure has been consistent and it has been possible to map this data from implementation to implementation. The UCS encoding differs from the previous encodings in “hard-coding” Fill-1 and Rotation-1 as “inherent” to the base character, but the structure remains the same and previous data can be reliably mapped to the structure of the encoding proposed here.

6. SignWriting Markup Language. There are several flavors of SWML. Some versions are more complicated and included more semantic structure than does the SignPuddle implementation which is predominant today.

For the type of SWML which Steve Slevinski used in the past, see an example from SignPuddle 1.5; see <http://www.signbank.org/signpuddle1.5/data/sgn/28/6810.swml>

This older SWML overloads the "sign" entity for punctuation. There are only 2 elements: signs and symbols. For the current implementation, Steve Slevinski separated out punctuation. Here is an example in SignPuddle 1.6; The online example is at:

<http://signbank.org/signpuddle1.6/dataformat.php?ui=1&sgn=4&ksw=M18x29S14c20n19xn29S271063xn11%20M18x33S1870an11x15S18701n18xn10S205008xn4S2e7340xn32%20S38800n36xn4>

This shows the phrase “Hello World.” in American Sign Language. This has 2 signs (“hello” and “world”) and one punctuation mark (SIGNWRITING FULL STOP).









Data Options

Markup

Symbol Identification

Data Content

Display Parameters

M  n19xn29  3xn11 M  n11x15  n18xn10 *8xn4  0xn32 

Markup

Symbol Identification


Data Content

Display Parameters

M n19xn29 3xn11 M n11x15 n18xn10 8xn4 0xn32

Figure 4. Here, the underlying data structure of “Hello World” is shown. In the upper box the glyphs (hand, three-back-and-forth-arrows, hand, hand, circling-arrow, punctuation) are shown surrounded by SWML markup for two-dimensional display. In the lower box, the triplet of (in this case) PUA characters are shown (displayed as square boxes) for each of those entities, flanked by the same SWML markup.

The main two elements in the markup are "signbox" and "punctuation". The punctuation element always contains a single punctuation symbol. The "signbox" element can have 2 types of elements: "sym" as spatial symbols and "seq" as sequential symbols. The spatial symbol includes 2-dimensional positioning and are considered unordered. The sequential symbols are ordered, but do not include 2-dimensional positioning.

Earlier implementations used a set of standardized symbol IDs to identify each symbol: example "01-01-001-01-01-01" is . The first 4 number parts are used for conversion to the modern symbol identification. A datafile with 652 rows is required for conversion. For conversion to Unicode, the value of the second column is revised starting from the hex value "1D700". A list of signs in this numeric format is given at http://signpuddle.net/iswa/data/iswa_sym_base.txt .

For symbol identification, existing software has 3 primary options: code, key, and Unicode.

- The code is a 16-bit number from 1 to 65,000. These codes are useful as primary keys in a database.

- The key is a string of 6 ASCII characters. This is used for the ASCII representation of SignWriting data.
- The Unicode is a string of 3 characters (minus inherent Fill-1 and Rotation-1).

There are simple mathematical formulae for conversion between the symbol code, key, and Unicode. These identifications are isomorphic. For the structures above the symbols, there are 2 types of markup: lite and full. They both represent the same data. The “lite” markup uses strings for signs and punctuation marks. The full markup uses XML. In both markups, the symbols can be identified by code, key, Unicode, or even symbol ID.

6.1 Encoding models for SignWriting graphic characters. A brief discussion as to possible encoding models is relevant to the UTC and WG2 decision about how to encode the characters. In principle, the following three methods could be used:

- encode 37,811 characters
- encode 522 handshapes (for left and right hands) and only 8 rotations
- encode 261 handshapes and 16 rotations

Choice (a) is equivalent to the 16-bit symbol code. This was in fact the first encoding considered, but it was dropped because of search limitation in the design. *Searching* was the main reason for choice (c). We can easily search for a general symbol base, or a symbol base with a specific fill, a symbol base with a specific rotation, or an exact symbol. Choice (b) has not been preferred because it is the handshape which is the basic phoneme, not the hand per se. Moreover, complex signs involving hands touching and crossing the body would make it more difficult for end users than choice (c) does. And choice (c) is isomorphic to previous implementations.

Since the triplets Base + Fill +Rotation are part of the "entity set" in SWML, our proposal optimizes mapping between existing data and the new UCS data which will be created after the proposed characters are encoded. The concept of symbol identity is used in SWML. We have 3 equivalent symbol identifications: code, key, and Unicode. The optimized mapping of existing data is explicitly stated in the mathematical conversions between these symbol identifications.

7. Collating order. For the purposes of the UCA and ISO/IEC 14651, the binary collation order in the code chart should be sufficient for the default tailorable template. Sorting SignWriting signs is far too complex for the default template.

8. Linebreaking. Line breaks do not occur in the middle of a sign. Line breaks do not occur before punctuation. It would appear that SignWriting graphic characters should have the same linebreaking properties as Egyptian hieroglyphs.

9. Unicode Character Properties.

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1D800;SIGNWRITING HAND-FIST INDEX;Lo;0;L;;;;N;;;;
..
1DA86;SIGNWRITING LOCATION LIMBS DIGITS;Lo;0;L;;;;N;;;;
1DA87;SIGNWRITING FULL STOP;Po;0;L;;;;N;;;;
1DA88;SIGNWRITING SEMICOLON;Po;0;L;;;;N;;;;
1DA89;SIGNWRITING COLON;Po;0;L;;;;N;;;;
1DA8A;SIGNWRITING PARENTHESIS;Po;0;L;;;;N;;;;
1DA9B;SIGNWRITING FILL MODIFIER-2;Mn;0;L;;;;N;;;;
1DA9C;SIGNWRITING FILL MODIFIER-3;Mn;0;L;;;;N;;;;
1DA9D;SIGNWRITING FILL MODIFIER-4;Mn;0;L;;;;N;;;;
1DA9E;SIGNWRITING FILL MODIFIER-5;Mn;0;L;;;;N;;;;
1DA9F;SIGNWRITING FILL MODIFIER-6;Mn;0;L;;;;N;;;;
1DAA1;SIGNWRITING ROTATION MODIFIER-2;Mn;0;L;;;;N;;;;
1DAA2;SIGNWRITING ROTATION MODIFIER-3;Mn;0;L;;;;N;;;;
1DAA3;SIGNWRITING ROTATION MODIFIER-4;Mn;0;L;;;;N;;;;

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1DAA4;SIGNWRITING ROTATION MODIFIER-5;Mn;0;L;;;;;N;;;;;
1DAA5;SIGNWRITING ROTATION MODIFIER-6;Mn;0;L;;;;;N;;;;;
1DAA6;SIGNWRITING ROTATION MODIFIER-7;Mn;0;L;;;;;N;;;;;
1DAA7;SIGNWRITING ROTATION MODIFIER-8;Mn;0;L;;;;;N;;;;;
1DAA8;SIGNWRITING ROTATION MODIFIER-9;Mn;0;L;;;;;N;;;;;
1DAA9;SIGNWRITING ROTATION MODIFIER-10;Mn;0;L;;;;;N;;;;;
1DAAA;SIGNWRITING ROTATION MODIFIER-11;Mn;0;L;;;;;N;;;;;
1DAAB;SIGNWRITING ROTATION MODIFIER-12;Mn;0;L;;;;;N;;;;;
1DAAC;SIGNWRITING ROTATION MODIFIER-13;Mn;0;L;;;;;N;;;;;
1DAAD;SIGNWRITING ROTATION MODIFIER-14;Mn;0;L;;;;;N;;;;;
1DAAE;SIGNWRITING ROTATION MODIFIER-15;Mn;0;L;;;;;N;;;;;
1DAAF;SIGNWRITING ROTATION MODIFIER-16;Mn;0;L;;;;;N;;;;;

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10. Issues for future standardization. As stated above, there are *no issues* with the character set proposed here. It has been stable since 2008, having been formalized after 34 years of development. Encoding of the characters proposed here will greatly facilitate discussion of SignWriting characters in the abstract in an interchangeable way, and will facilitate further work on the encoding model (yet to be determined) for the layout of SignWriting characters. To facilitate further discussion for future standardization, the issues regarding that encoding model are presented below. But those issues should *not* delay the encoding of the graphic characters proposed in this document.

Encoding Model Issues (as presented by SignWriting programmer Steve Slevinski).

The symbol set is stable and widely accepted. The main structures of signs and punctuations in lanes are understood. The major unresolved issue with encoding SignWriting deals with layout. While every sign has a defined center, how to define the sign itself is still unresolved.

The main issue of layout is how the writer will use the system. The balance between complexity and usability from the writer's perspective is of primary importance. It must always be remembered that the writer decides the symbols and their placement. Anything else is a different writing system.

The second issue of layout involve comparison. Signs can quickly be scanned for the symbols used; however, the relative position of the symbols require an analysis of the layout. The different layouts offer different approaches for evaluation.

The third issues of layout involves variability. There are two types of variability. The first, inter-personal variability, occurs when writers pick different symbols and different details. Inter-personal variability is part of the writing system that layout can not resolve. The second, intra-personal variability, occurs when writers use the same symbols, but in slightly different positions. With layout choices, it is possible to reduce the intra-personal variability, but this reduction may harm the writing system by imposing too many restrictions on the writer.

A fourth issues of layout involves elegance and beauty. Some may consider one type of layout to be superior to another based on subjective personal opinions. SignWriting is a unique script. The ultimate choice of layout should be based on the writer's experience, comparison, and variability.

In Figure 4 above, the various layout options are identified for the sign sentence "Hello World." which contains 2 signs and 1 punctuation mark.

Freeform Layout. With freeform layout, the writer decides what symbols to use and the exact symbol position. The freeform layout offers the greatest flexibility for the writer and the greatest intra-personal variability.

Cartesian Coordinates. Cartesian coordinates specify X and Y coordinates for the top, left of the symbol glyph. The coordinates of the symbols relate to the center of the canvas. This is the current method for writing. The writer is presented with a canvas and positions each symbol independently.

Polar Coordinates. Polar coordinates specify an angle and a distance from the center of the sign to the center of each symbol. The current cartesian data can be exported to this format.

Restricted Layout. It is possible to impose restrictions on symbol placement thereby limiting the intra-personal variability of sign spellings.

Generic Restrictions. Instead of allowing any coordinates, it may be possible to limit the options. For example, with polar coordinates, only allow specific angles and specific distances. This has not been evaluated.

Specific Restrictions. It may be possible to perform a statistical analysis of the symbols used to come up with a limited number of attachment points around each symbol and a small list of predefined distances between symbols. This information would be symbol specific and could greatly reduce the intra-personal variability if successfully implemented.

Non-form Layout. Some would argue that the writer should not determine the form of a sign, but should input linguistic analysis and let the layout/font manager determine the best representation for the written sign. This would change the script from a writing system into computer aided design, requiring concepts that are not part of the script and are not part of the writer's thought processes. The idea would make for an interesting project, but it is not about encoding SignWriting.

Absolute versus Relative Positioning. Any of the above layout options have two choices for positioning. The freeform layouts defined above use absolute positioning, where the position of each symbol relates to the center of the sign. It may be possible to interrelate the position of the symbols. Relative positioning would create some type of linked list for symbol positions. The position of each symbol would be defined based on the position of the previous symbol in the list. The viability and usability of relative positioning is unknown and has not been investigated.

11. Glyphs. It should also be noted that the TrueType reference glyphs in this preliminary proposal are quite imperfect and will be improved in due course.

12. Acknowledgements. This project was made possible in part by a grant from the Center For Sutton Movement Writing.

13. Bibliography

The main online sources for Signwriting are:

- <http://www.signwriting.org>
- <http://www.signbank.org> in particular <http://www.signbank.org/iswa/>
- <http://www.signpuddle.net>

SignWriting Instruction and Reference Manuals

SignWriting: Sign Languages are Written Languages. Part 1: SignWriting Basics by Valerie Sutton

<http://www.signwriting.org/archive/docs6/sw0550-SignWriting-Manual-Part1-Basics.pdf>

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<http://www.signwriting.org/archive/docs5/sw0472-BR-Licoes-SignWriting.pdf>

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<http://www.signwriting.org/archive/docs4/sw0304-NO-TegnSkrift-Laerebok-06.pdf>

Kurs i Tegnskrift (Self-Study Guide for learning SignWriting) by Professor Dr. Ingvild Roald
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	1D80	1D81	1D82	1D83	1D84	1D85	1D86	1D87	1D88	1D89	1D8A	1D8B	1D8C	1D8D	1D8E
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	1D8F	1D90	1D91	1D92	1D93	1D94	1D95	1D96	1D97	1D98	1D99	1D9A	1D9B	1D9C
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1	1D8F1	1D901	1D911	1D921	1D931	1D941	1D951	1D961	1D971	1D981	1D991	1D9A1	1D9B1	1D9C1
2	1D8F2	1D902	1D912	1D922	1D932	1D942	1D952	1D962	1D972	1D982	1D992	1D9A2	1D9B2	1D9C2
3	1D8F3	1D903	1D913	1D923	1D933	1D943	1D953	1D963	1D973	1D983	1D993	1D9A3	1D9B3	1D9C3
4	1D8F4	1D904	1D914	1D924	1D934	1D944	1D954	1D964	1D974	1D984	1D994	1D9A4	1D9B4	1D9C4
5	1D8F5	1D905	1D915	1D925	1D935	1D945	1D955	1D965	1D975	1D985	1D995	1D9A5	1D9B5	1D9C5
6	1D8F6	1D906	1D916	1D926	1D936	1D946	1D956	1D966	1D976	1D986	1D996	1D9A6	1D9B6	1D9C6
7	1D8F7	1D907	1D917	1D927	1D937	1D947	1D957	1D967	1D977	1D987	1D997	1D9A7	1D9B7	1D9C7
8	1D8F8	1D908	1D918	1D928	1D938	1D948	1D958	1D968	1D978	1D988	1D998	1D9A8	1D9B8	1D9C8
9	1D8F9	1D909	1D919	1D929	1D939	1D949	1D959	1D969	1D979	1D989	1D999	1D9A9	1D9B9	1D9C9
A	1D8FA	1D90A	1D91A	1D92A	1D93A	1D94A	1D95A	1D96A	1D97A	1D98A	1D99A	1D9AA	1D9BA	1D9CA
B	1D8FB	1D90B	1D91B	1D92B	1D93B	1D94B	1D95B	1D96B	1D97B	1D98B	1D99B	1D9AB	1D9BB	1D9CB
C	1D8FC	1D90C	1D91C	1D92C	1D93C	1D94C	1D95C	1D96C	1D97C	1D98C	1D99C	1D9AC	1D9BC	1D9CC
D	1D8FD	1D90D	1D91D	1D92D	1D93D	1D94D	1D95D	1D96D	1D97D	1D98D	1D99D	1D9AD	1D9BD	1D9CD
E	1D8FE	1D90E	1D91E	1D92E	1D93E	1D94E	1D95E	1D96E	1D97E	1D98E	1D99E	1D9AE	1D9BE	1D9CE
F	1D8FF	1D90F	1D91F	1D92F	1D93F	1D94F	1D95F	1D96F	1D97F	1D98F	1D99F	1D9AF	1D9BF	1D9CF

	1D9D	1D9E	1D9F	1DA0	1DA1	1DA2	1DA3	1DA4	1DA5	1DA6	1DA7	1DA8	1DA9	1DAA
0														
1														SW R 2 1DAA1
2														SW R 3 1DAA2
3														SW R 4 1DAA3
4														SW R 5 1DAA4
5														SW R 6 1DAA5
6														SW R 7 1DAA6
7														SW R 8 1DAA7
8														SW R 9 1DAA8
9														SW R 10 1DAA9
A														SW R 11 1DAAA
B													SW F 2 1DA9B	SW R 12 1DAA B
C													SW F 3 1DA9C	SW R 13 1DAAC
D													SW F 4 1DA9D	SW R 14 1DAAD
E													SW F 5 1DA9E	SW R 15 1DAAE
F													SW F 6 1DA9F	SW R 16 1DAAF

Handshapes with index finger

1D800		SIGNWRITING HAND-FIST INDEX
1D801		SIGNWRITING HAND-CIRCLE INDEX
1D802		SIGNWRITING HAND-CUP INDEX
1D803		SIGNWRITING HAND-OVAL INDEX
1D804		SIGNWRITING HAND-HINGE INDEX
1D805		SIGNWRITING HAND-ANGLE INDEX
1D806		SIGNWRITING HAND-FIST INDEX BENT
1D807		SIGNWRITING HAND-CIRCLE INDEX BENT
1D808		SIGNWRITING HAND-FIST THUMB UNDER INDEX BENT
1D809		SIGNWRITING HAND-FIST INDEX RAISED KNUCKLE
1D80A		SIGNWRITING HAND-FIST INDEX CUPPED
1D80B		SIGNWRITING HAND-FIST INDEX HINGED
1D80C		SIGNWRITING HAND-FIST INDEX HINGED LOW
1D80D		SIGNWRITING HAND-CIRCLE INDEX HINGE

Handshapes with index and middle fingers

1D80E		SIGNWRITING HAND-FIST INDEX MIDDLE
1D80F		SIGNWRITING HAND-CIRCLE INDEX MIDDLE
1D810		SIGNWRITING HAND-FIST INDEX MIDDLE BENT
1D811		SIGNWRITING HAND-FIST INDEX MIDDLE RAISED KNUCKLES
1D812		SIGNWRITING HAND-FIST INDEX MIDDLE HINGED
1D813		SIGNWRITING HAND-FIST INDEX UP MIDDLE HINGED
1D814		SIGNWRITING HAND-FIST INDEX HINGED MIDDLE UP
1D815		SIGNWRITING HAND-FIST INDEX MIDDLE CONJOINED
1D816		SIGNWRITING HAND-FIST INDEX MIDDLE CONJOINED INDEX BENT
1D817		SIGNWRITING HAND-FIST INDEX MIDDLE CONJOINED MIDDLE BENT
1D818		SIGNWRITING HAND-FIST INDEX MIDDLE CONJOINED CUPPED
1D819		SIGNWRITING HAND-FIST INDEX MIDDLE CONJOINED HINGED
1D81A		SIGNWRITING HAND-FIST INDEX MIDDLE CROSSED
1D81B		SIGNWRITING HAND-CIRCLE INDEX MIDDLE CROSSED
1D81C		SIGNWRITING HAND-FIST MIDDLE BENT OVER INDEX
1D81D		SIGNWRITING HAND-FIST INDEX BENT OVER MIDDLE

Handshapes with index and middle fingers and thumb

1D81E		SIGNWRITING HAND-FIST INDEX MIDDLE THUMB
1D81F		SIGNWRITING HAND-CIRCLE INDEX MIDDLE THUMB
1D820		SIGNWRITING HAND-FIST INDEX MIDDLE STRAIGHT THUMB BENT
1D821		SIGNWRITING HAND-FIST INDEX MIDDLE THUMB STRAIGHT
1D822		SIGNWRITING HAND-FIST INDEX MIDDLE THUMB BENT
1D823		SIGNWRITING HAND-FIST INDEX MIDDLE HINGED SPREAD THUMB SIDE
1D824		SIGNWRITING HAND-FIST INDEX UP MIDDLE HINGED THUMB SIDE
1D825		SIGNWRITING HAND-FIST INDEX UP MIDDLE HINGED THUMB CONJOINED
1D826		SIGNWRITING HAND-FIST INDEX HINGED MIDDLE UP THUMB SIDE


1D827		SIGNWRITING HAND-FIST INDEX MIDDLE UP SPREAD THUMB FORWARD
1D828		SIGNWRITING HAND-FIST INDEX MIDDLE THUMB CUPPED
1D829		SIGNWRITING HAND-FIST INDEX MIDDLE THUMB CIRCLED
1D82A		SIGNWRITING HAND-FIST INDEX MIDDLE THUMB HOOKED
1D82B		SIGNWRITING HAND-FIST INDEX MIDDLE THUMB HINGED
1D82C		SIGNWRITING HAND-FIST THUMB BETWEEN INDEX MIDDLE STRAIGHT
1D82D		SIGNWRITING HAND-FIST INDEX MIDDLE CONJOINED THUMB SIDE
1D82E		SIGNWRITING HAND-FIST INDEX MIDDLE CONJOINED THUMB SIDE CONJOINED
1D82F		SIGNWRITING HAND-FIST INDEX MIDDLE CONJOINED THUMB SIDE BENT
1D830		SIGNWRITING HAND-FIST MIDDLE THUMB HOOKED INDEX UP
1D831		SIGNWRITING HAND-FIST INDEX THUMB HOOKED MIDDLE UP
1D832		SIGNWRITING HAND-FIST INDEX MIDDLE CONJOINED HINGED THUMB SIDE
1D833		SIGNWRITING HAND-FIST INDEX MIDDLE CROSSED THUMB SIDE
1D834		SIGNWRITING HAND-FIST INDEX MIDDLE CONJOINED THUMB FORWARD
1D835		SIGNWRITING HAND-FIST INDEX MIDDLE CONJOINED CUPPED THUMB FORWARD
1D836		SIGNWRITING HAND-FIST MIDDLE THUMB CUPPED INDEX UP
1D837		SIGNWRITING HAND-FIST INDEX THUMB CUPPED MIDDLE UP
1D838		SIGNWRITING HAND-FIST MIDDLE THUMB CIRCLED INDEX UP
1D839		SIGNWRITING HAND-FIST MIDDLE THUMB CIRCLED INDEX HINGED
1D83A		SIGNWRITING HAND-FIST INDEX THUMB ANGLED OUT MIDDLE UP
1D83B		SIGNWRITING HAND-FIST INDEX THUMB ANGLED IN MIDDLE UP
1D83C		SIGNWRITING HAND-FIST INDEX THUMB CIRCLED MIDDLE UP
1D83D		SIGNWRITING HAND-FIST INDEX MIDDLE THUMB CONJOINED HINGED
1D83E		SIGNWRITING HAND-FIST INDEX MIDDLE THUMB ANGLED OUT
1D83F		SIGNWRITING HAND-FIST INDEX MIDDLE THUMB ANGLED
1D840		SIGNWRITING HAND-FIST MIDDLE THUMB ANGLED OUT INDEX UP
1D841		SIGNWRITING HAND-FIST MIDDLE THUMB ANGLED OUT INDEX CROSSED
1D842		SIGNWRITING HAND-FIST MIDDLE THUMB ANGLED INDEX UP
1D843		SIGNWRITING HAND-FIST INDEX THUMB HOOKED MIDDLE HINGED


Handshapes with four fingers


1D844		SIGNWRITING HAND-FLAT FOUR FINGERS
1D845		SIGNWRITING HAND-FLAT FOUR FINGERS BENT
1D846		SIGNWRITING HAND-FLAT FOUR FINGERS HINGED
1D847		SIGNWRITING HAND-FLAT FOUR FINGERS CONJOINED
1D848		SIGNWRITING HAND-FLAT FOUR FINGERS CONJOINED SPLIT
1D849		SIGNWRITING HAND-CLAW FOUR FINGERS CONJOINED
1D84A		SIGNWRITING HAND-FIST FOUR FINGERS CONJOINED BENT


1D84B  SIGNWRITING HAND-HINGE FOUR FINGERS CONJOINED


Handshapes with five fingers


1D84C  SIGNWRITING HAND-FLAT FIVE FINGERS SPREAD


1D84D  SIGNWRITING HAND-FLAT HEEL FIVE FINGERS SPREAD


1D84E  SIGNWRITING HAND-FLAT FIVE FINGERS SPREAD FOUR BENT


1D84F  SIGNWRITING HAND-FLAT HEEL FIVE FINGERS SPREAD FOUR BENT


1D850  SIGNWRITING HAND-FLAT FIVE FINGERS SPREAD BENT


1D851  SIGNWRITING HAND-FLAT HEEL FIVE FINGERS SPREAD BENT


1D852  SIGNWRITING HAND-FLAT FIVE FINGERS SPREAD THUMB FORWARD


1D853  SIGNWRITING HAND-CUP FIVE FINGERS SPREAD


1D854  SIGNWRITING HAND-CUP FIVE FINGERS SPREAD OPEN


1D855  SIGNWRITING HAND-HINGE FIVE FINGERS SPREAD OPEN


1D856  SIGNWRITING HAND-OVAL FIVE FINGERS SPREAD


1D857  SIGNWRITING HAND-FLAT FIVE FINGERS SPREAD HINGED


1D858  SIGNWRITING HAND-FLAT FIVE FINGERS SPREAD HINGED THUMB SIDE


1D859  SIGNWRITING HAND-FLAT FIVE FINGERS SPREAD HINGED NO THUMB


1D85A  SIGNWRITING HAND-FLAT


1D85B  SIGNWRITING HAND-FLAT BETWEEN PALM FACINGS


1D85C  SIGNWRITING HAND-FLAT HEEL


1D85D  SIGNWRITING HAND-FLAT THUMB SIDE


1D85E  SIGNWRITING HAND-FLAT HEEL THUMB SIDE


1D85F  SIGNWRITING HAND-FLAT THUMB BENT


1D860  SIGNWRITING HAND-FLAT THUMB FORWARD


1D861  SIGNWRITING HAND-FLAT SPLIT INDEX THUMB SIDE


1D862  SIGNWRITING HAND-FLAT SPLIT CENTER


1D863  SIGNWRITING HAND-FLAT SPLIT CENTER THUMB SIDE


1D864  SIGNWRITING HAND-FLAT SPLIT CENTER THUMB SIDE BENT


1D865  SIGNWRITING HAND-FLAT SPLIT LITTLE


1D866  SIGNWRITING HAND-CLAW


1D867  SIGNWRITING HAND-CLAW THUMB SIDE


1D868  SIGNWRITING HAND-CLAW NO THUMB


1D869  SIGNWRITING HAND-CLAW THUMB FORWARD


1D86A  SIGNWRITING HAND-HOOK CURLICUE


1D86B  SIGNWRITING HAND-HOOK


1D86C  SIGNWRITING HAND-CUP OPEN


1D86D  SIGNWRITING HAND-CUP


1D86E  SIGNWRITING HAND-CUP OPEN THUMB SIDE


1D86F  SIGNWRITING HAND-CUP THUMB SIDE


1D870  SIGNWRITING HAND-CUP OPEN NO THUMB


1D871  SIGNWRITING HAND-CUP NO THUMB


1D872  SIGNWRITING HAND-CUP OPEN THUMB FORWARD


1D873  SIGNWRITING HAND-CUP THUMB FORWARD

1D874  SIGNWRITING HAND-CURLICUE OPEN

1D875  SIGNWRITING HAND-CURLICUE

1D876  SIGNWRITING HAND-CIRCLE

1D877  SIGNWRITING HAND-OVAL

1D878  SIGNWRITING HAND-OVAL THUMB SIDE

1D879 SIGNWRITING HAND-OVAL NO THUMB

1D87A SIGNWRITING HAND-OVAL THUMB FORWARD

1D87B SIGNWRITING HAND-HINGE OPEN

1D87C  SIGNWRITING HAND-HINGE OPEN THUMB FORWARD

1D87D  SIGNWRITING HAND-HINGE

1D87E  SIGNWRITING HAND-HINGE SMALL

1D87F  SIGNWRITING HAND-HINGE OPEN THUMB SIDE

1D880  SIGNWRITING HAND-HINGE THUMB SIDE

1D881  SIGNWRITING HAND-HINGE OPEN NO THUMB

1D882  SIGNWRITING HAND-HINGE NO THUMB


1D883  SIGNWRITING HAND-HINGE THUMB SIDE TOUCHING INDEX

1D884  SIGNWRITING HAND-HINGE THUMB BETWEEN MIDDLE RING

1D885  SIGNWRITING HAND-ANGLE

Handshapes with little finger

1D886  SIGNWRITING HAND-FIST INDEX MIDDLE RING

1D887  SIGNWRITING HAND-CIRCLE INDEX MIDDLE RING

1D888  SIGNWRITING HAND-HINGE INDEX MIDDLE RING


1D889  SIGNWRITING HAND-ANGLE INDEX MIDDLE RING

1D88A  SIGNWRITING HAND-HINGE LITTLE

1D88B  SIGNWRITING HAND-FIST INDEX MIDDLE RING BENT

1D88C  SIGNWRITING HAND-FIST INDEX MIDDLE RING CONJOINED

1D88D  SIGNWRITING HAND-HINGE INDEX MIDDLE RING CONJOINED

1D88E  SIGNWRITING HAND-FIST LITTLE DOWN

1D88F  SIGNWRITING HAND-FIST LITTLE DOWN RIPPLE STRAIGHT


1D890  SIGNWRITING HAND-FIST LITTLE DOWN RIPPLE CURVED

1D891  SIGNWRITING HAND-FIST LITTLE DOWN OTHERS CIRCLED


1D892  SIGNWRITING HAND-FIST LITTLE UP

1D893  SIGNWRITING HAND-FIST THUMB UNDER LITTLE UP

1D894  SIGNWRITING HAND-CIRCLE LITTLE UP

1D895  SIGNWRITING HAND-OVAL LITTLE UP

1D896  SIGNWRITING HAND-ANGLE LITTLE UP

1D897  SIGNWRITING HAND-FIST LITTLE RAISED KNUCKLE

1D898  SIGNWRITING HAND-FIST LITTLE BENT

1D899  SIGNWRITING HAND-FIST LITTLE TOUCHES THUMB


1D89A  SIGNWRITING HAND-FIST LITTLE THUMB

1D89B  SIGNWRITING HAND-HINGE LITTLE THUMB

1D89C  SIGNWRITING HAND-FIST LITTLE INDEX THUMB

1D89D  SIGNWRITING HAND-HINGE LITTLE INDEX THUMB

1D89E  SIGNWRITING HAND-ANGLE LITTLE INDEX THUMB OUT

1D89F  SIGNWRITING HAND-ANGLE LITTLE INDEX THUMB INDEX THUMB


1D8A0  SIGNWRITING HAND-FIST LITTLE INDEX

1D8A1  SIGNWRITING HAND-CIRCLE LITTLE INDEX

1D8A2  SIGNWRITING HAND-HINGE LITTLE INDEX

1D8A3  SIGNWRITING HAND-ANGLE LITTLE INDEX

Handshapes with ring finger

1D8A4  SIGNWRITING HAND-FIST INDEX MIDDLE LITTLE

1D8A5  SIGNWRITING HAND-CIRCLE INDEX MIDDLE LITTLE

1D8A6  SIGNWRITING HAND-HINGE INDEX MIDDLE LITTLE

1D8A7  SIGNWRITING HAND-HINGE RING

1D8A8		SIGNWRITING HAND-ANGLE INDEX MIDDLE LITTLE
1D8A9		SIGNWRITING HAND-FIST INDEX MIDDLE CROSS LITTLE
1D8AA		SIGNWRITING HAND-CIRCLE INDEX MIDDLE CROSS LITTLE
1D8AB		SIGNWRITING HAND-FIST RING DOWN
1D8AC		SIGNWRITING HAND-HINGE RING DOWN INDEX THUMB HOOK MIDDLE
1D8AD		SIGNWRITING HAND-ANGLE RING DOWN MIDDLE THUMB INDEX CROSS
1D8AE		SIGNWRITING HAND-FIST RING UP
1D8AF		SIGNWRITING HAND-FIST RING RAISED KNUCKLE
1D8B0		SIGNWRITING HAND-FIST RING LITTLE
1D8B1		SIGNWRITING HAND-OVAL RING LITTLE
1D8B2		SIGNWRITING HAND-ANGLE RING LITTLE
1D8B3		SIGNWRITING HAND-ANGLE RING LITTLE
1D8B4		SIGNWRITING HAND-FIST RING MIDDLE
1D8B5		SIGNWRITING HAND-FIST RING MIDDLE CONJOINED
1D8B6		SIGNWRITING HAND-FIST RING MIDDLE RAISED KNUCKLES
1D8B7		SIGNWRITING HAND-FIST RING INDEX
1D8B8		SIGNWRITING HAND-FIST RING THUMB
1D8B9		SIGNWRITING HAND-HOOK RING THUMB

Handshapes with middle finger

1D8BA		SIGNWRITING HAND-FIST INDEX RING LITTLE
1D8BB		SIGNWRITING HAND-CIRCLE INDEX RING LITTLE
1D8BC		SIGNWRITING HAND-CURLICUE INDEX RING LITTLE ON
1D8BD		SIGNWRITING HAND-HOOK INDEX RING LITTLE OUT
1D8BE		SIGNWRITING HAND-HOOK INDEX RING LITTLE IN
1D8BF		SIGNWRITING HAND-HOOK INDEX RING LITTLE UNDER
1D8C0		SIGNWRITING HAND-CUP INDEX RING LITTLE
1D8C1		SIGNWRITING HAND-HINGE INDEX RING LITTLE
1D8C2		SIGNWRITING HAND-ANGLE INDEX RING LITTLE OUT
1D8C3		SIGNWRITING HAND-ANGLE INDEX RING LITTLE
1D8C4		SIGNWRITING HAND-FIST MIDDLE DOWN
1D8C5		SIGNWRITING HAND-HINGE MIDDLE
1D8C6		SIGNWRITING HAND-FIST MIDDLE UP
1D8C7		SIGNWRITING HAND-CIRCLE MIDDLE UP
1D8C8		SIGNWRITING HAND-FIST MIDDLE RAISED KNUCKLE
1D8C9		SIGNWRITING HAND-FIST MIDDLE UP THUMB SIDE
1D8CA		SIGNWRITING HAND-HOOK MIDDLE THUMB
1D8CB		SIGNWRITING HAND-FIST MIDDLE THUMB LITTLE
1D8CC		SIGNWRITING HAND-FIST MIDDLE LITTLE

Handshapes with index finger and thumb

1D8CD		SIGNWRITING HAND-FIST MIDDLE RING LITTLE
1D8CE		SIGNWRITING HAND-CIRCLE MIDDLE RING LITTLE
1D8CF		SIGNWRITING HAND-CURLICUE MIDDLE RING LITTLE ON
1D8D0		SIGNWRITING HAND-CUP MIDDLE RING LITTLE
1D8D1		SIGNWRITING HAND-HINGE MIDDLE RING LITTLE
1D8D2		SIGNWRITING HAND-ANGLE MIDDLE RING LITTLE OUT

1D8D3		SIGNWRITING HAND-ANGLE MIDDLE RING LITTLE IN
1D8D4		SIGNWRITING HAND-ANGLE MIDDLE RING LITTLE
1D8D5		SIGNWRITING HAND-CIRCLE MIDDLE RING LITTLE BENT
1D8D6		SIGNWRITING HAND-CLAW MIDDLE RING LITTLE CONJOINED
1D8D7		SIGNWRITING HAND-CLAW MIDDLE RING LITTLE CONJOINED SIDE
1D8D8		SIGNWRITING HAND-HOOK MIDDLE RING LITTLE CONJOINED
1D8D9		SIGNWRITING HAND-HOOK MIDDLE RING LITTLE CONJOINED IN
1D8DA		SIGNWRITING HAND-HOOK MIDDLE RING LITTLE CONJOINED
1D8DB		SIGNWRITING HAND-HINGE INDEX HINGED
1D8DC		SIGNWRITING HAND-FIST INDEX THUMB SIDE
1D8DD		SIGNWRITING HAND-HINGE INDEX THUMB SIDE
1D8DE		SIGNWRITING HAND-FIST INDEX THUMB SIDE THUMB DIAGONAL
1D8DF		SIGNWRITING HAND-FIST INDEX THUMB SIDE THUMB CONJOINED
1D8E0		SIGNWRITING HAND-FIST INDEX THUMB SIDE THUMB BENT
1D8E1		SIGNWRITING HAND-FIST INDEX THUMB SIDE INDEX BENT
1D8E2		SIGNWRITING HAND-FIST INDEX THUMB SIDE BOTH BENT
1D8E3		SIGNWRITING HAND-FIST INDEX THUMB SIDE INDEX HINGE
1D8E4		SIGNWRITING HAND-FIST INDEX THUMB FORWARD INDEX STRAIGHT
1D8E5		SIGNWRITING HAND-FIST INDEX THUMB FORWARD INDEX BENT
1D8E6		SIGNWRITING HAND-FIST INDEX THUMB HOOK
1D8E7		SIGNWRITING HAND-FIST INDEX THUMB CURLICUE
1D8E8		SIGNWRITING HAND-FIST INDEX THUMB CURVE THUMB INSIDE
1D8E9		SIGNWRITING HAND-CLAW INDEX THUMB CURVE THUMB INSIDE
1D8EA		SIGNWRITING HAND-FIST INDEX THUMB CURVE THUMB UNDER
1D8EB		SIGNWRITING HAND-FIST INDEX THUMB CIRCLE
1D8EC		SIGNWRITING HAND-CUP INDEX THUMB
1D8ED		SIGNWRITING HAND-CUP INDEX THUMB OPEN
1D8EE		SIGNWRITING HAND-HINGE INDEX THUMB OPEN
1D8EF		SIGNWRITING HAND-HINGE INDEX THUMB LARGE
1D8F0		SIGNWRITING HAND-HINGE INDEX THUMB
1D8F1		SIGNWRITING HAND-HINGE INDEX THUMB SMALL
1D8F2		SIGNWRITING HAND-ANGLE INDEX THUMB OUT
1D8F3		SIGNWRITING HAND-ANGLE INDEX THUMB IN
1D8F4		SIGNWRITING HAND-ANGLE INDEX THUMB

Handshapes with thumb

1D8F5		SIGNWRITING HAND-FIST THUMB
1D8F6		SIGNWRITING HAND-FIST THUMB HEEL
1D8F7		SIGNWRITING HAND-FIST THUMB SIDE DIAGONAL
1D8F8		SIGNWRITING HAND-FIST THUMB SIDE CONJOINED
1D8F9		SIGNWRITING HAND-FIST THUMB SIDE BENT
1D8FA		SIGNWRITING HAND-FIST THUMB FORWARD
1D8FB		SIGNWRITING HAND-FIST THUMB BETWEEN INDEX MIDDLE

1D8FC	☞	SIGNWRITING HAND-FIST THUMB BETWEEN MIDDLE RING
1D8FD	☞	SIGNWRITING HAND-FIST THUMB BETWEEN RING LITTLE
1D8FE	☞	SIGNWRITING HAND-FIST THUMB UNDER TWO FINGERS
1D8FF	☞	SIGNWRITING HAND-FIST THUMB OVER TWO FINGERS
1D900	☞	SIGNWRITING HAND-FIST THUMB UNDER THREE FINGERS
1D901	☞	SIGNWRITING HAND-FIST THUMB UNDER FOUR FINGERS
1D902	☞	SIGNWRITING HAND-FIST THUMB OVER FOUR RAISED KNUCKLES
1D903	☞	SIGNWRITING HAND-FIST
1D904	☞	SIGNWRITING HAND-FIST HEEL

Contact movement indicators

1D905	*	SIGNWRITING TOUCH SINGLE
1D906	**	SIGNWRITING TOUCH MULTIPLE
1D907	x	SIGNWRITING TOUCH BETWEEN
1D908	+	SIGNWRITING GRASP SINGLE
1D909	++	SIGNWRITING GRASP MULTIPLE
1D90A	+	SIGNWRITING GRASP BETWEEN
1D90B	#	SIGNWRITING STRIKE SINGLE
1D90C	##	SIGNWRITING STRIKE MULTIPLE
1D90D	##	SIGNWRITING STRIKE BETWEEN
1D90E	⊙	SIGNWRITING BRUSH SINGLE
1D90F	⊙⊙	SIGNWRITING BRUSH MULTIPLE
1D910	⊙	SIGNWRITING BRUSH BETWEEN
1D911	@	SIGNWRITING RUB SINGLE
1D912	@@	SIGNWRITING RUB MULTIPLE
1D913	@	SIGNWRITING RUB BETWEEN
1D914	△	SIGNWRITING SURFACE SYMBOLS
1D915	⊕	SIGNWRITING SURFACE BETWEEN

Finger movement indicators

1D916	●	SIGNWRITING SQUEEZE LARGE SINGLE
1D917	●	SIGNWRITING SQUEEZE SMALL SINGLE
1D918	●●	SIGNWRITING SQUEEZE LARGE MULTIPLE
1D919	●●	SIGNWRITING SQUEEZE SMALL MULTIPLE
1D91A	↘	SIGNWRITING SQUEEZE SEQUENTIAL
1D91B	○	SIGNWRITING FLICK LARGE SINGLE
1D91C	○	SIGNWRITING FLICK SMALL SINGLE
1D91D	○○	SIGNWRITING FLICK LARGE MULTIPLE
1D91E	○○	SIGNWRITING FLICK SMALL MULTIPLE
1D91F	↘	SIGNWRITING FLICK SEQUENTIAL
1D920	○●○	SIGNWRITING SQUEEZE FLICK ALTERNATING

Finger movement indicators

1D921	↕	SIGNWRITING MOVEMENT-HINGE UP DOWN LARGE
1D922	^	SIGNWRITING MOVEMENT-HINGE UP DOWN SMALL
1D923	↘	SIGNWRITING MOVEMENT-HINGE UP SEQUENTIAL
1D924	↘	SIGNWRITING MOVEMENT-HINGE DOWN SEQUENTIAL
1D925	↕	SIGNWRITING MOVEMENT-HINGE UP DOWN ALTERNATING LARGE
1D926	^	SIGNWRITING MOVEMENT-HINGE UP DOWN ALTERNATING SMALL
1D927	≡	SIGNWRITING MOVEMENT-HINGE SIDE TO SIDE SCISSORS
1D928	↑	SIGNWRITING MOVEMENT-WALLPLANE FINGER CONTACT
1D929	↑	SIGNWRITING MOVEMENT-FLOORPLANE FINGER CONTACT

Movement indicators

1D92A	↑	SIGNWRITING MOVEMENT-WALLPLANE SINGLE STRAIGHT SMALL
1D92B	↑	SIGNWRITING MOVEMENT-WALLPLANE SINGLE STRAIGHT MEDIUM
1D92C	↑	SIGNWRITING MOVEMENT-WALLPLANE SINGLE STRAIGHT LARGE
1D92D	↑	SIGNWRITING MOVEMENT-WALLPLANE SINGLE STRAIGHT LARGEST
1D92E	↕	SIGNWRITING MOVEMENT-WALLPLANE SINGLE WRIST FLEX
1D92F	↕↕	SIGNWRITING MOVEMENT-WALLPLANE DOUBLE STRAIGHT
1D930	↕↕	SIGNWRITING MOVEMENT-WALLPLANE DOUBLE WRIST FLEX
1D931	↕↕	SIGNWRITING MOVEMENT-WALLPLANE DOUBLE ALTERNATING
1D932	↕↕	SIGNWRITING MOVEMENT-WALLPLANE DOUBLE ALTERNATING WRIST FLEX
1D933	⊕	SIGNWRITING MOVEMENT-WALLPLANE CROSS
1D934	↕↕↕	SIGNWRITING MOVEMENT-WALLPLANE TRIPLE STRAIGHT MOVEMENT
1D935	↕↕↕	SIGNWRITING MOVEMENT-WALLPLANE TRIPLE WRIST FLEX
1D936	↕↕↕	SIGNWRITING MOVEMENT-WALLPLANE TRIPLE ALTERNATING
1D937	↕↕↕	SIGNWRITING MOVEMENT-WALLPLANE TRIPLE ALTERNATING WRIST FLEX
1D938	↶	SIGNWRITING MOVEMENT-WALLPLANE BEND SMALL
1D939	↶	SIGNWRITING MOVEMENT-WALLPLANE BEND MEDIUM
1D93A	↶	SIGNWRITING MOVEMENT-WALLPLANE BEND LARGE
1D93B	↶	SIGNWRITING MOVEMENT-WALLPLANE CORNER SMALL
1D93C	↶	SIGNWRITING MOVEMENT-WALLPLANE CORNER MEDIUM
1D93D	↶	SIGNWRITING MOVEMENT-WALLPLANE CORNER LARGE
1D93E	↶	SIGNWRITING MOVEMENT-WALLPLANE CORNER ROTATION
1D93F	↶	SIGNWRITING MOVEMENT-WALLPLANE CHECK SMALL
1D940	↶	SIGNWRITING MOVEMENT-WALLPLANE CHECK MEDIUM
1D941	↶	SIGNWRITING MOVEMENT-WALLPLANE CHECK LARGE
1D942	☞	SIGNWRITING MOVEMENT-WALLPLANE BOX SMALL
1D943	☞	SIGNWRITING MOVEMENT-WALLPLANE BOX MEDIUM
1D944	☞	SIGNWRITING MOVEMENT-WALLPLANE BOX LARGE
1D945	↗	SIGNWRITING MOVEMENT-WALLPLANE ZIGZAG SMALL
1D946	↗	SIGNWRITING MOVEMENT-WALLPLANE ZIGZAG MEDIUM
1D947	↗	SIGNWRITING MOVEMENT-WALLPLANE ZIGZAG LARGE
1D948	↗	SIGNWRITING MOVEMENT-WALLPLANE PEAKS SMALL
1D949	↗	SIGNWRITING MOVEMENT-WALLPLANE PEAKS MEDIUM
1D94A	↗	SIGNWRITING MOVEMENT-WALLPLANE PEAKS LARGE
1D94B	↗	SIGNWRITING TRAVEL-WALLPLANE ROTATION-WALLPLANE SINGLE
1D94C	↗	SIGNWRITING TRAVEL-WALLPLANE ROTATION-WALLPLANE DOUBLE
1D94D	↗	SIGNWRITING TRAVEL-WALLPLANE ROTATION-WALLPLANE ALTERNATING

1D94E	↗	SIGNWRITING TRAVEL-WALLPLANE ROTATION-FLOORPLANE SINGLE	1D974	↖	SIGNWRITING MOVEMENT-FLOORPLANE CORNER SMALL
1D94F	↖	SIGNWRITING TRAVEL-WALLPLANE ROTATION-FLOORPLANE DOUBLE	1D975	↖	SIGNWRITING MOVEMENT-FLOORPLANE CORNER MEDIUM
1D950	↗↖	SIGNWRITING TRAVEL-WALLPLANE ROTATION-FLOORPLANE ALTERNATING	1D976	↖	SIGNWRITING MOVEMENT-FLOORPLANE CORNER LARGE
1D951	↗↖↗	SIGNWRITING TRAVEL-WALLPLANE SHAKING	1D977	↖	SIGNWRITING MOVEMENT-FLOORPLANE CHECK
1D952	↗↖↗↖	SIGNWRITING TRAVEL-WALLPLANE ARM SPIRAL SINGLE	1D978	↖	SIGNWRITING MOVEMENT-FLOORPLANE BOX SMALL
1D953	↗↖↗↖↗	SIGNWRITING TRAVEL-WALLPLANE ARM SPIRAL DOUBLE	1D979	↖	SIGNWRITING MOVEMENT-FLOORPLANE BOX MEDIUM
1D954	↗↖↗↖↗↖	SIGNWRITING TRAVEL-WALLPLANE ARM SPIRAL TRIPLE	1D97A	↖	SIGNWRITING MOVEMENT-FLOORPLANE BOX LARGE
1D955	↗↖	SIGNWRITING MOVEMENT-DIAGONAL AWAY SMALL	1D97B	↗↖	SIGNWRITING MOVEMENT-FLOORPLANE ZIGZAG SMALL
1D956	↗↖	SIGNWRITING MOVEMENT-DIAGONAL AWAY MEDIUM	1D97C	↗↖	SIGNWRITING MOVEMENT-FLOORPLANE ZIGZAG MEDIUM
1D957	↗↖	SIGNWRITING MOVEMENT-DIAGONAL AWAY LARGE	1D97D	↗↖	SIGNWRITING MOVEMENT-FLOORPLANE ZIGZAG LARGE
1D958	↗↖	SIGNWRITING MOVEMENT-DIAGONAL AWAY LARGEST	1D97E	↗↖	SIGNWRITING MOVEMENT-FLOORPLANE PEAKS SMALL
1D959	↗↖	SIGNWRITING MOVEMENT-DIAGONAL TOWARDS SMALL	1D97F	↗↖	SIGNWRITING MOVEMENT-FLOORPLANE PEAKS MEDIUM
1D95A	↗↖	SIGNWRITING MOVEMENT-DIAGONAL TOWARDS MEDIUM	1D980	↗↖	SIGNWRITING MOVEMENT-FLOORPLANE PEAKS LARGE
1D95B	↗↖	SIGNWRITING MOVEMENT-DIAGONAL TOWARDS LARGE	1D981	↗↖	SIGNWRITING TRAVEL-FLOORPLANE ROTATION-FLOORPLANE SINGLE
1D95C	↗↖	SIGNWRITING MOVEMENT-DIAGONAL TOWARDS LARGEST	1D982	↗↖	SIGNWRITING TRAVEL-FLOORPLANE ROTATION-FLOORPLANE DOUBLE
1D95D	↗↖	SIGNWRITING MOVEMENT-DIAGONAL BETWEEN AWAY SMALL	1D983	↗↖	SIGNWRITING TRAVEL-FLOORPLANE ROTATION-FLOORPLANE ALTERNATING
1D95E	↗↖	SIGNWRITING MOVEMENT-DIAGONAL BETWEEN AWAY MEDIUM	1D984	↗↖	SIGNWRITING TRAVEL-FLOORPLANE ROTATION-WALLPLANE SINGLE
1D95F	↗↖	SIGNWRITING MOVEMENT-DIAGONAL BETWEEN AWAY LARGE	1D985	↗↖	SIGNWRITING TRAVEL-FLOORPLANE ROTATION-WALLPLANE DOUBLE
1D960	↗↖	SIGNWRITING MOVEMENT-DIAGONAL BETWEEN AWAY LARGEST	1D986	↗↖	SIGNWRITING TRAVEL-FLOORPLANE ROTATION-WALLPLANE ALTERNATING
1D961	↗↖	SIGNWRITING MOVEMENT-DIAGONAL BETWEEN TOWARDS SMALL	1D987	↗↖	SIGNWRITING TRAVEL-FLOORPLANE SHAKING
1D962	↗↖	SIGNWRITING MOVEMENT-DIAGONAL BETWEEN TOWARDS MEDIUM	1D988	↗	SIGNWRITING MOVEMENT-WALLPLANE CURVE QUARTER SMALL
1D963	↗↖	SIGNWRITING MOVEMENT-DIAGONAL BETWEEN TOWARDS LARGE	1D989	↗	SIGNWRITING MOVEMENT-WALLPLANE CURVE QUARTER MEDIUM
1D964	↗↖	SIGNWRITING MOVEMENT-DIAGONAL BETWEEN TOWARDS LARGEST	1D98A	↗	SIGNWRITING MOVEMENT-WALLPLANE CURVE QUARTER LARGE
1D965	↗	SIGNWRITING MOVEMENT-FLOORPLANE SINGLE STRAIGHT SMALL	1D98B	↗	SIGNWRITING MOVEMENT-WALLPLANE CURVE QUARTER LARGEST
1D966	↗	SIGNWRITING MOVEMENT-FLOORPLANE SINGLE STRAIGHT MEDIUM	1D98C	↗	SIGNWRITING MOVEMENT-WALLPLANE CURVE HALF-CIRCLE SMALL
1D967	↗	SIGNWRITING MOVEMENT-FLOORPLANE SINGLE STRAIGHT LARGE	1D98D	↗	SIGNWRITING MOVEMENT-WALLPLANE CURVE HALF-CIRCLE MEDIUM
1D968	↗	SIGNWRITING MOVEMENT-FLOORPLANE SINGLE STRAIGHT LARGEST	1D98E	↗	SIGNWRITING MOVEMENT-WALLPLANE CURVE HALF-CIRCLE LARGE
1D969	↗↖	SIGNWRITING MOVEMENT-FLOORPLANE SINGLE WRIST FLEX	1D98F	↗	SIGNWRITING MOVEMENT-WALLPLANE CURVE HALF-CIRCLE LARGEST
1D96A	↗↖↗	SIGNWRITING MOVEMENT-FLOORPLANE DOUBLE STRAIGHT	1D990	↗	SIGNWRITING MOVEMENT-WALLPLANE CURVE THREE-QUARTER CIRCLE SMALL
1D96B	↗↖↗	SIGNWRITING MOVEMENT-FLOORPLANE DOUBLE WRIST FLEX	1D991	↗	SIGNWRITING MOVEMENT-WALLPLANE CURVE THREE-QUARTER CIRCLE MEDIUM
1D96C	↗↖↗↖	SIGNWRITING MOVEMENT-FLOORPLANE DOUBLE ALTERNATING	1D992	↗	SIGNWRITING MOVEMENT-WALLPLANE HUMP SMALL
1D96D	↗↖↗↖	SIGNWRITING MOVEMENT-FLOORPLANE DOUBLE ALTERNATING WRIST FLEX	1D993	↗	SIGNWRITING MOVEMENT-WALLPLANE HUMP MEDIUM
1D96E	↗↖↗↖	SIGNWRITING MOVEMENT-FLOORPLANE CROSS	1D994	↗	SIGNWRITING MOVEMENT-WALLPLANE HUMP LARGE
1D96F	↗↖↗↖↗	SIGNWRITING MOVEMENT-FLOORPLANE TRIPLE STRAIGHT MOVEMENT	1D995	↗	SIGNWRITING MOVEMENT-WALLPLANE LOOP SMALL
1D970	↗↖↗↖↗	SIGNWRITING MOVEMENT-FLOORPLANE TRIPLE WRIST FLEX	1D996	↗	SIGNWRITING MOVEMENT-WALLPLANE LOOP MEDIUM
1D971	↗↖↗↖↗	SIGNWRITING MOVEMENT-FLOORPLANE TRIPLE ALTERNATING MOVEMENT	1D997	↗	SIGNWRITING MOVEMENT-WALLPLANE LOOP LARGE
1D972	↗↖↗↖↗	SIGNWRITING MOVEMENT-FLOORPLANE TRIPLE ALTERNATING WRIST FLEX	1D998	↗	SIGNWRITING MOVEMENT-WALLPLANE LOOP SMALL DOUBLE
1D973	↗	SIGNWRITING MOVEMENT-FLOORPLANE BEND			

1D999		SIGNWRITING MOVEMENT-WALLPLANE WAVE CURVE DOUBLE SMALL	1D9BE		SIGNWRITING MOVEMENT-FLOORPLANE LOOP HITTING CEILING LARGE SINGLE
1D99A		SIGNWRITING MOVEMENT-WALLPLANE WAVE CURVE DOUBLE MEDIUM	1D9BF		SIGNWRITING MOVEMENT-FLOORPLANE LOOP HITTING CEILING SMALL DOUBLE
1D99B		SIGNWRITING MOVEMENT-WALLPLANE WAVE CURVE DOUBLE LARGE	1D9C0		SIGNWRITING MOVEMENT-FLOORPLANE LOOP HITTING CEILING LARGE DOUBLE
1D99C		SIGNWRITING MOVEMENT-WALLPLANE WAVE CURVE TRIPLE SMALL	1D9C1		SIGNWRITING MOVEMENT-FLOORPLANE WAVE HITTING CEILING SMALL
1D99D		SIGNWRITING MOVEMENT-WALLPLANE WAVE CURVE TRIPLE MEDIUM	1D9C2		SIGNWRITING MOVEMENT-FLOORPLANE WAVE HITTING CEILING LARGE
1D99E		SIGNWRITING MOVEMENT-WALLPLANE WAVE CURVE TRIPLE LARGE	1D9C3		SIGNWRITING ROTATION-FLOORPLANE SINGLE HITTING CEILING
1D99F		SIGNWRITING MOVEMENT-WALLPLANE CURVE THEN STRAIGHT	1D9C4		SIGNWRITING ROTATION-FLOORPLANE DOUBLE HITTING CEILING
1D9A0		SIGNWRITING MOVEMENT-WALLPLANE CURVED CROSS SMALL	1D9C5		SIGNWRITING ROTATION-FLOORPLANE ALTERNATING HITTING CEILING
1D9A1		SIGNWRITING MOVEMENT-WALLPLANE CURVED CROSS MEDIUM	1D9C6		SIGNWRITING MOVEMENT-FLOORPLANE CURVE HITTING FLOOR SMALL
1D9A2		SIGNWRITING ROTATION-WALLPLANE SINGLE	1D9C7		SIGNWRITING MOVEMENT-FLOORPLANE CURVE HITTING FLOOR LARGE
1D9A3		SIGNWRITING ROTATION-WALLPLANE DOUBLE	1D9C8		SIGNWRITING MOVEMENT-FLOORPLANE HUMP HITTING FLOOR SMALL DOUBLE
1D9A4		SIGNWRITING ROTATION-WALLPLANE ALTERNATE	1D9C9		SIGNWRITING MOVEMENT-FLOORPLANE HUMP HITTING FLOOR LARGE DOUBLE
1D9A5		SIGNWRITING MOVEMENT-WALLPLANE SHAKING	1D9CA		SIGNWRITING MOVEMENT-FLOORPLANE HUMP HITTING FLOOR TRIPLE SMALL TRIPLE
1D9A6		SIGNWRITING MOVEMENT-WALLPLANE CURVE HITTING FRONT WALL	1D9CB		SIGNWRITING MOVEMENT-FLOORPLANE HUMP HITTING FLOOR TRIPLE LARGE TRIPLE
1D9A7		SIGNWRITING MOVEMENT-WALLPLANE HUMP HITTING FRONT WALL	1D9CC		SIGNWRITING MOVEMENT-FLOORPLANE LOOP HITTING FLOOR SMALL SINGLE
1D9A8		SIGNWRITING MOVEMENT-WALLPLANE LOOP HITTING FRONT WALL	1D9CD		SIGNWRITING MOVEMENT-FLOORPLANE LOOP HITTING FLOOR LARGE SINGLE
1D9A9		SIGNWRITING MOVEMENT-WALLPLANE WAVE HITTING FRONT WALL	1D9CE		SIGNWRITING MOVEMENT-FLOORPLANE LOOP HITTING FLOOR SMALL DOUBLE
1D9AA		SIGNWRITING ROTATION-WALLPLANE SINGLE HITTING FRONT WALL	1D9CF		SIGNWRITING MOVEMENT-FLOORPLANE LOOP HITTING FLOOR LARGE DOUBLE
1D9AB		SIGNWRITING ROTATION-WALLPLANE DOUBLE HITTING FRONT WALL	1D9D0		SIGNWRITING MOVEMENT-FLOORPLANE WAVE HITTING FLOOR SMALL
1D9AC		SIGNWRITING ROTATION-WALLPLANE ALTERNATING HITTING FRONT WALL	1D9D1		SIGNWRITING MOVEMENT-FLOORPLANE WAVE HITTING FLOOR LARGE
1D9AD		SIGNWRITING MOVEMENT-WALLPLANE CURVE HITTING CHEST	1D9D2		SIGNWRITING ROTATION-FLOORPLANE SINGLE HITTING FLOOR
1D9AE		SIGNWRITING MOVEMENT-WALLPLANE HUMP HITTING CHEST	1D9D3		SIGNWRITING ROTATION-FLOORPLANE DOUBLE HITTING FLOOR
1D9AF		SIGNWRITING MOVEMENT-WALLPLANE LOOP HITTING CHEST	1D9D4		SIGNWRITING ROTATION-FLOORPLANE ALTERNATING HITTING FLOOR
1D9B0		SIGNWRITING MOVEMENT-WALLPLANE WAVE HITTING CHEST	1D9D5		SIGNWRITING MOVEMENT-FLOORPLANE CURVE SMALL
1D9B1		SIGNWRITING ROTATION-WALLPLANE SINGLE HITTING CHEST	1D9D6		SIGNWRITING MOVEMENT-FLOORPLANE CURVE MEDIUM
1D9B2		SIGNWRITING ROTATION-WALLPLANE DOUBLE HITTING CHEST	1D9D7		SIGNWRITING MOVEMENT-FLOORPLANE CURVE LARGE
1D9B3		SIGNWRITING ROTATION-WALLPLANE ALTERNATING HITTING CHEST	1D9D8		SIGNWRITING MOVEMENT-FLOORPLANE CURVE LARGEST
1D9B4		SIGNWRITING MOVEMENT-WALLPLANE WAVE DIAGONAL PATH SMALL	1D9D9		SIGNWRITING MOVEMENT-FLOORPLANE CURVE COMBINED
1D9B5		SIGNWRITING MOVEMENT-WALLPLANE WAVE DIAGONAL PATH MEDIUM	1D9DA		SIGNWRITING MOVEMENT-FLOORPLANE HUMP SMALL
1D9B6		SIGNWRITING MOVEMENT-WALLPLANE WAVE DIAGONAL PATH LARGE	1D9DB		SIGNWRITING MOVEMENT-FLOORPLANE LOOP SMALL
1D9B7		SIGNWRITING MOVEMENT-FLOORPLANE CURVE HITTING CEILING SMALL	1D9DC		SIGNWRITING MOVEMENT-FLOORPLANE WAVE SNAKE
1D9B8		SIGNWRITING MOVEMENT-FLOORPLANE CURVE HITTING CEILING LARGE	1D9DD		SIGNWRITING MOVEMENT-FLOORPLANE WAVE SMALL
1D9B9		SIGNWRITING MOVEMENT-FLOORPLANE HUMP HITTING CEILING SMALL DOUBLE	1D9DE		SIGNWRITING MOVEMENT-FLOORPLANE WAVE LARGE
1D9BA		SIGNWRITING MOVEMENT-FLOORPLANE HUMP HITTING CEILING LARGE DOUBLE	1D9DF		SIGNWRITING ROTATION-FLOORPLANE SINGLE
1D9BB		SIGNWRITING MOVEMENT-FLOORPLANE HUMP HITTING CEILING SMALL TRIPLE	1D9E0		SIGNWRITING ROTATION-FLOORPLANE DOUBLE
1D9BC		SIGNWRITING MOVEMENT-FLOORPLANE HUMP HITTING CEILING LARGE TRIPLE	1D9E1		SIGNWRITING ROTATION-FLOORPLANE ALTERNATING
1D9BD		SIGNWRITING MOVEMENT-FLOORPLANE LOOP HITTING CEILING SMALL SINGLE	1D9E2		SIGNWRITING MOVEMENT-FLOORPLANE SHAKING PARALLEL

1D9E3		SIGNWRITING MOVEMENT-WALLPLANE ARM CIRCLE SMALL SINGLE
1D9E4		SIGNWRITING MOVEMENT-WALLPLANE ARM CIRCLE MEDIUM SINGLE
1D9E5		SIGNWRITING MOVEMENT-WALLPLANE ARM CIRCLE SMALL DOUBLE
1D9E6		SIGNWRITING MOVEMENT-WALLPLANE ARM CIRCLE MEDIUM DOUBLE
1D9E7		SIGNWRITING MOVEMENT-FLOORPLANE ARM CIRCLE HITTING WALL SMALL SINGLE
1D9E8		SIGNWRITING MOVEMENT-FLOORPLANE ARM CIRCLE HITTING WALL MEDIUM SINGLE
1D9E9		SIGNWRITING MOVEMENT-FLOORPLANE ARM CIRCLE HITTING WALL LARGE SINGLE
1D9EA		SIGNWRITING MOVEMENT-FLOORPLANE ARM CIRCLE HITTING WALL SMALL DOUBLE
1D9EB		SIGNWRITING MOVEMENT-FLOORPLANE ARM CIRCLE HITTING WALL MEDIUM DOUBLE
1D9EC		SIGNWRITING MOVEMENT-FLOORPLANE ARM CIRCLE HITTING WALL LARGE DOUBLE
1D9ED		SIGNWRITING MOVEMENT-WALLPLANE WRIST CIRCLE FRONT SINGLE
1D9EE		SIGNWRITING MOVEMENT-WALLPLANE WRIST CIRCLE FRONT DOUBLE
1D9EF		SIGNWRITING MOVEMENT-FLOORPLANE WRIST CIRCLE HITTING WALL SINGLE
1D9F0		SIGNWRITING MOVEMENT-FLOORPLANE WRIST CIRCLE HITTING WALL DOUBLE
1D9F1		SIGNWRITING MOVEMENT-WALLPLANE FINGER CIRCLES SINGLE
1D9F2		SIGNWRITING MOVEMENT-WALLPLANE FINGER CIRCLES DOUBLE
1D9F3		SIGNWRITING MOVEMENT-FLOORPLANE FINGER CIRCLES HITTING WALL SINGLE
1D9F4		SIGNWRITING MOVEMENT-FLOORPLANE FINGER CIRCLES HITTING WALL DOUBLE

Dynamics indicators

1D9F5		SIGNWRITING DYNAMIC ARROWHEAD SMALL
1D9F6		SIGNWRITING DYNAMIC ARROWHEAD LARGE
1D9F7		SIGNWRITING DYNAMIC FAST
1D9F8		SIGNWRITING DYNAMIC SLOW
1D9F9		SIGNWRITING DYNAMIC TENSE
1D9FA		SIGNWRITING DYNAMIC RELAXED
1D9FB		SIGNWRITING DYNAMIC SIMULTANEOUS
1D9FC		SIGNWRITING DYNAMIC SIMULTANEOUS ALTERNATING
1D9FD		SIGNWRITING DYNAMIC EVERY OTHER TIME
1D9FE		SIGNWRITING DYNAMIC GRADUAL

Headshapes

1D9FF		SIGNWRITING HEAD
1DA00		SIGNWRITING HEAD RIM
1DA01		SIGNWRITING HEAD MOVEMENT-WALLPLANE STRAIGHT
1DA02		SIGNWRITING HEAD MOVEMENT-WALLPLANE TILT
1DA03		SIGNWRITING HEAD MOVEMENT-FLOORPLANE STRAIGHT
1DA04		SIGNWRITING HEAD MOVEMENT-WALLPLANE CURVE
1DA05		SIGNWRITING HEAD MOVEMENT-FLOORPLANE CURVE
1DA06		SIGNWRITING HEAD MOVEMENT CIRCLE
1DA07		SIGNWRITING FACE DIRECTION POSITION NOSE FORWARD TILTING
1DA08		SIGNWRITING FACE DIRECTION POSITION NOSE UP OR DOWN
1DA09		SIGNWRITING FACE DIRECTION POSITION NOSE UP OR DOWN TILTING
1DA0A		SIGNWRITING EYEBROWS STRAIGHT UP
1DA0B		SIGNWRITING EYEBROWS STRAIGHT NEUTRAL

1DA0C		SIGNWRITING EYEBROWS STRAIGHT DOWN
1DA0D		SIGNWRITING DREAMY EYEBROWS NEUTRAL DOWN
1DA0E		SIGNWRITING DREAMY EYEBROWS DOWN NEUTRAL
1DA0F		SIGNWRITING DREAMY EYEBROWS UP NEUTRAL
1DA10		SIGNWRITING DREAMY EYEBROWS NEUTRAL UP
1DA11		SIGNWRITING FOREHEAD NEUTRAL
1DA12		SIGNWRITING FOREHEAD CONTACT
1DA13		SIGNWRITING FOREHEAD WRINKLED
1DA14		SIGNWRITING EYES OPEN
1DA15		SIGNWRITING EYES SQUEEZED
1DA16		SIGNWRITING EYES CLOSED
1DA17		SIGNWRITING EYE BLINK SINGLE
1DA18		SIGNWRITING EYE BLINK MULTIPLE
1DA19		SIGNWRITING EYES HALF OPEN
1DA1A		SIGNWRITING EYES WIDE OPEN
1DA1B		SIGNWRITING EYES HALF CLOSED
1DA1C		SIGNWRITING EYES WIDENING MOVEMENT
1DA1D		SIGNWRITING EYE WINK • squeezed eye blink
1DA1E		SIGNWRITING EYELASHES UP
1DA1F		SIGNWRITING EYELASHES DOWN
1DA20		SIGNWRITING EYELASHES FLUTTERING
1DA21		SIGNWRITING EYEGAZE-WALLPLANE STRAIGHT
1DA22		SIGNWRITING EYEGAZE-WALLPLANE STRAIGHT DOUBLE
1DA23		SIGNWRITING EYEGAZE-WALLPLANE STRAIGHT ALTERNATING
1DA24		SIGNWRITING EYEGAZE-FLOORPLANE STRAIGHT
1DA25		SIGNWRITING EYEGAZE-FLOORPLANE STRAIGHT DOUBLE
1DA26		SIGNWRITING EYEGAZE-FLOORPLANE STRAIGHT ALTERNATING
1DA27		SIGNWRITING EYEGAZE-WALLPLANE CURVED
1DA28		SIGNWRITING EYEGAZE-FLOORPLANE CURVED
1DA29		SIGNWRITING EYEGAZE-WALLPLANE CIRCLING
1DA2A		SIGNWRITING CHEEKS PUFFED
1DA2B		SIGNWRITING CHEEKS NEUTRAL
1DA2C		SIGNWRITING CHEEKS SUCKED
1DA2D		SIGNWRITING TENSE CHEEKS HIGH
1DA2E		SIGNWRITING TENSE CHEEKS MIDDLE
1DA2F		SIGNWRITING TENSE CHEEKS LOW
1DA30		SIGNWRITING EARS
1DA31		SIGNWRITING NOSE NEUTRAL
1DA32		SIGNWRITING NOSE CONTACT
1DA33		SIGNWRITING NOSE WRINKLES
1DA34		SIGNWRITING NOSE WIGGLES
1DA35		SIGNWRITING AIR BLOWING OUT
1DA36		SIGNWRITING AIR SUCKING IN
1DA37		SIGNWRITING AIR BLOW SMALL ROTATIONS
1DA38		SIGNWRITING AIR SUCK SMALL ROTATIONS
1DA39		SIGNWRITING BREATH INHALE
1DA3A		SIGNWRITING BREATH EXHALE
1DA3B		SIGNWRITING MOUTH CLOSED NEUTRAL
1DA3C		SIGNWRITING MOUTH CLOSED FORWARD
1DA3D		SIGNWRITING MOUTH CLOSED CONTACT
1DA3E		SIGNWRITING MOUTH SMILE
1DA3F		SIGNWRITING MOUTH SMILE WRINKLED
1DA40		SIGNWRITING MOUTH SMILE OPEN
1DA41		SIGNWRITING MOUTH FROWN
1DA42		SIGNWRITING MOUTH FROWN WRINKLED
1DA43		SIGNWRITING MOUTH FROWN OPEN
1DA44		SIGNWRITING MOUTH OPEN CIRCLE

1DA45		SIGNWRITING MOUTH OPEN FORWARD
1DA46		SIGNWRITING MOUTH OPEN WRINKLED
1DA47		SIGNWRITING MOUTH OPEN OVAL
1DA48		SIGNWRITING MOUTH OPEN OVAL WRINKLED
1DA49		SIGNWRITING MOUTH OPEN OVAL YAWN
1DA4A		SIGNWRITING MOUTH OPEN RECTANGLE
1DA4B		SIGNWRITING MOUTH OPEN RECTANGLE WRINKLED
1DA4C		SIGNWRITING MOUTH OPEN RECTANGLE YAWN
1DA4D		SIGNWRITING MOUTH KISS
1DA4E		SIGNWRITING MOUTH KISS FORWARD
1DA4F		SIGNWRITING MOUTH KISS WRINKLED
1DA50		SIGNWRITING MOUTH TENSE
1DA51		SIGNWRITING MOUTH TENSE FORWARD
1DA52		SIGNWRITING MOUTH TENSE SUCKED
1DA53		SIGNWRITING LIPS PRESSED TOGETHER
1DA54		SIGNWRITING LIP LOWER OVER UPPER
1DA55		SIGNWRITING LIP UPPER OVER LOWER
1DA56		SIGNWRITING MOUTH CORNERS
1DA57		SIGNWRITING MOUTH WRINKLES SINGLE
1DA58		SIGNWRITING MOUTH WRINKLES DOUBLE
1DA59		SIGNWRITING TONGUE STICKING OUT FAR
1DA5A		SIGNWRITING TONGUE LICKING LIPS
1DA5B		SIGNWRITING TONGUE TIP BETWEEN LIPS
1DA5C		SIGNWRITING TONGUE TIP TOUCHING INSIDE MOUTH
1DA5D		SIGNWRITING TONGUE INSIDE MOUTH RELAXED
1DA5E		SIGNWRITING TONGUE MOVES AGAINST CHEEK
1DA5F		SIGNWRITING TONGUE CENTRE STICKING OUT
1DA60		SIGNWRITING TONGUE CENTRE INSIDE MOUTH
1DA61		SIGNWRITING TEETH
1DA62		SIGNWRITING TEETH MOVEMENT
1DA63		SIGNWRITING TEETH ON TONGUE
1DA64		SIGNWRITING TEETH ON TONGUE MOVEMENT
1DA65		SIGNWRITING TEETH ON LIPS
1DA66		SIGNWRITING TEETH ON LIPS MOVEMENT
1DA67		SIGNWRITING TEETH BITE LIPS
1DA68		SIGNWRITING MOVEMENT-WALLPLANE JAW
1DA69		SIGNWRITING MOVEMENT-FLOORPLANE JAW
1DA6A		SIGNWRITING NECK
1DA6B		SIGNWRITING HAIR
1DA6C		SIGNWRITING EXCITEMENT

Body shapes

1DA6D		SIGNWRITING SHOULDER HIP SPINE
1DA6E		SIGNWRITING SHOULDER HIP POSITIONS
1DA6F		SIGNWRITING WALLPLANE SHOULDER HIP MOVE
1DA70		SIGNWRITING FLOORPLANE SHOULDER HIP MOVE
1DA71		SIGNWRITING SHOULDER TILTING FROM WAIST
1DA72		SIGNWRITING TORSO-WALLPLANE STRAIGHT STRETCH
1DA73		SIGNWRITING TORSO-WALLPLANE CURVED BEND
1DA74		SIGNWRITING TORSO-FLOORPLANE TWISTING
1DA75		SIGNWRITING UPPER BODY TILTING FROM HIP JOINTS
1DA76		SIGNWRITING LIMB COMBINATION
1DA77		SIGNWRITING LIMB LENGTH-1
1DA78		SIGNWRITING LIMB LENGTH-2
1DA79		SIGNWRITING LIMB LENGTH-3
1DA7A		SIGNWRITING LIMB LENGTH-4
1DA7B		SIGNWRITING LIMB LENGTH-5
1DA7C		SIGNWRITING LIMB LENGTH-6

1DA7D		SIGNWRITING LIMB LENGTH-7
1DA7E		SIGNWRITING FINGER

Location bases

1DA7F		SIGNWRITING LOCATION-WALLPLANE SPACE
1DA80		SIGNWRITING LOCATION-FLOORPLANE SPACE
1DA81		SIGNWRITING LOCATION HEIGHT
1DA82		SIGNWRITING LOCATION WIDTH
1DA83		SIGNWRITING LOCATION DEPTH
1DA84		SIGNWRITING LOCATION HEAD NECK
1DA85		SIGNWRITING LOCATION TORSO
1DA86		SIGNWRITING LOCATION LIMBS DIGITS

Punctuation

1DA87		SIGNWRITING COMMA
1DA88		SIGNWRITING FULL STOP
1DA89		SIGNWRITING SEMICOLON
1DA8A		SIGNWRITING COLON
1DA8B		SIGNWRITING PARENTHESIS
	•	is a closing parenthesis when used with 1DAA5 signwriting rotation modifier-5

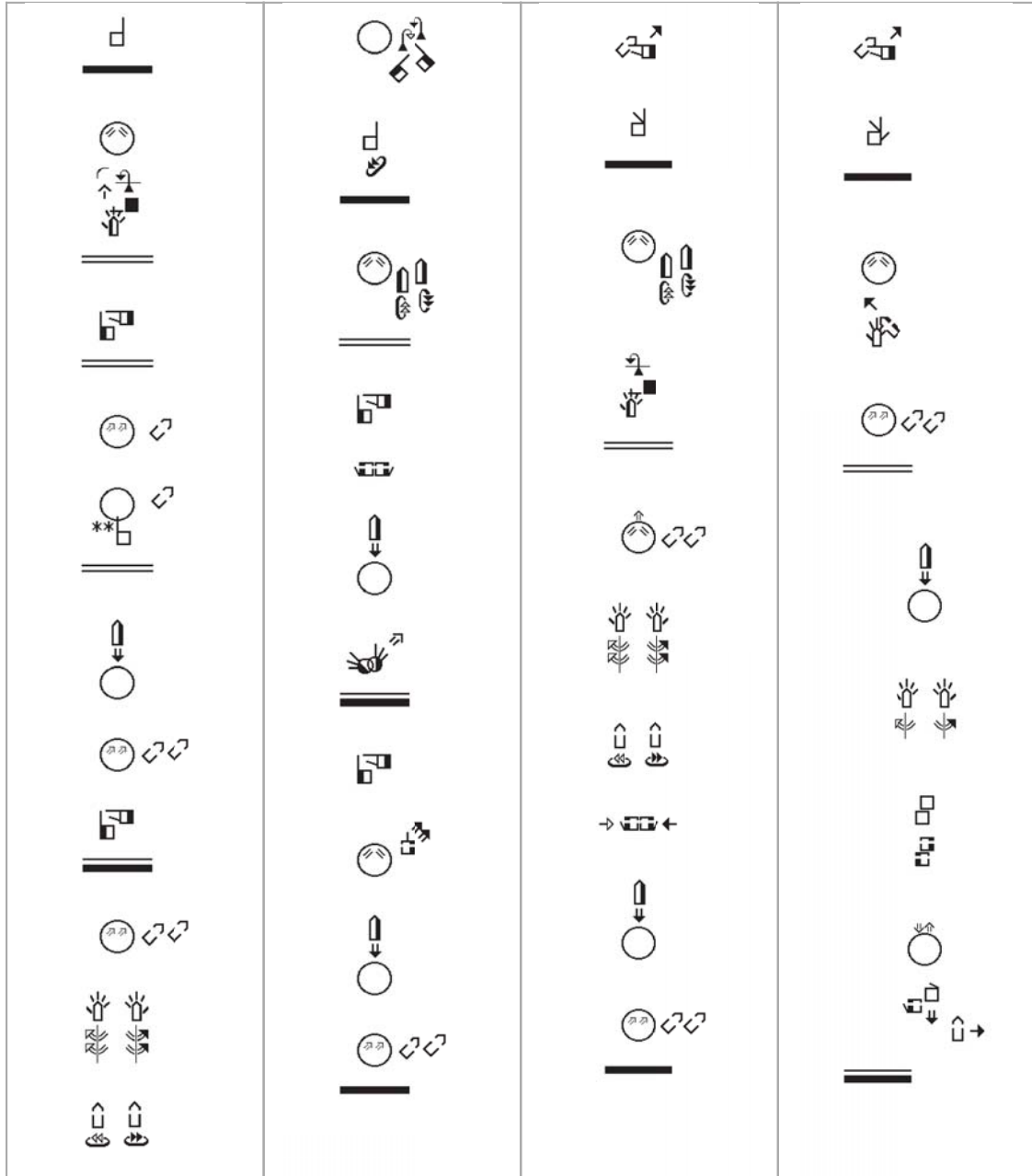
Fill modifiers

1DA9B		SIGNWRITING FILL MODIFIER-2
1DA9C		SIGNWRITING FILL MODIFIER-3
1DA9D		SIGNWRITING FILL MODIFIER-4
1DA9E		SIGNWRITING FILL MODIFIER-5
1DA9F		SIGNWRITING FILL MODIFIER-6

Rotation modifiers

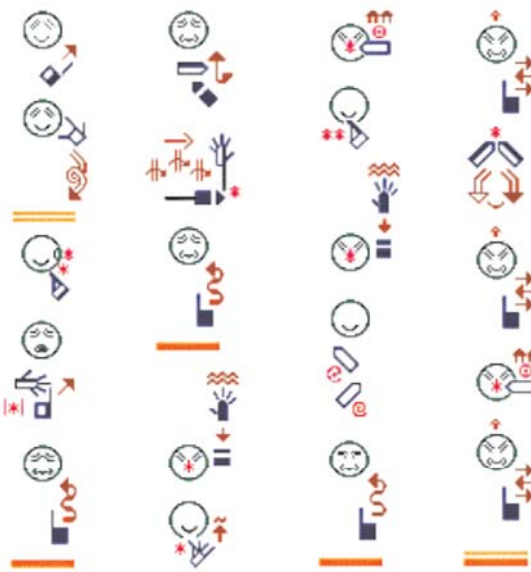
1DAA1		SIGNWRITING ROTATION MODIFIER-2
1DAA2		SIGNWRITING ROTATION MODIFIER-3
1DAA3		SIGNWRITING ROTATION MODIFIER-4
1DAA4		SIGNWRITING ROTATION MODIFIER-5
1DAA5		SIGNWRITING ROTATION MODIFIER-6
1DAA6		SIGNWRITING ROTATION MODIFIER-7
1DAA7		SIGNWRITING ROTATION MODIFIER-8
1DAA8		SIGNWRITING ROTATION MODIFIER-9
1DAA9		SIGNWRITING ROTATION MODIFIER-10
1DAAA		SIGNWRITING ROTATION MODIFIER-11
1DAAB		SIGNWRITING ROTATION MODIFIER-12
1DAAC		SIGNWRITING ROTATION MODIFIER-13
1DAAD		SIGNWRITING ROTATION MODIFIER-14
1DAAE		SIGNWRITING ROTATION MODIFIER-15
1DAAF		SIGNWRITING ROTATION MODIFIER-16

12. Additional figures.



1 In the beginning the Word already existed. The Word was with God, and the Word was God. 2 He existed in the beginning with God. 3 God created everything through him, and nothing was created except through him. NLT 2

Figure 5. The beginning of the Gospel of John in American Sign Language, written in SignWriting.



Learn To Read American Sign Language

Video is Receptive

The pictures below are from the video. Darline is a left-handed signer. She is facing you, telling you the story.

SignWriting is Expressive

The exact same signs are written below in SignWriting. The signs are written from your point of view. Now YOU are telling the story, as a right-handed signer.







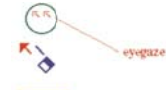


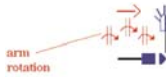















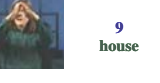























<p>1 what?</p> 	 <p>arrow means head moves forward</p>	 <p>eyebrows that show dreaming or imagining</p>	 <p>6 somewhere wandering</p>		 <p>12 there (index)</p>	 <p>eyegaze</p>
<p>2 quote</p> 	 <p>arm rotation movement</p>	 <p>arm rotation movement</p>	 <p>7 deep forest</p>		 <p>13 papa</p>	 <p>touch forehead twice</p>
<p>3 three</p> 	 <p>pause</p>	 <p>surprise facial expression</p>	 <p>8 somewhere wandering oh! look! there (index)</p>		 <p>14 bear</p>	 <p>eyebrows up</p>
<p>4 bears</p> 	 <p>end of sentence</p>	 <p>asterisk means touch</p>	 <p>9 house</p>		 <p>15 open newspaper</p>	 <p>eyegaze down diagonal</p>
<p>5 Goldilocks</p> 	 <p>end of sentence</p>	 <p>tense mouth</p>	 <p>10 sitting on a hill</p>		 <p>16 read</p>	 <p>movement down twice "down-down"</p>
	 <p>eyes closed</p>	 <p>tension symbol marks classifier</p>	 <p>11 enter</p>		 <p>17 newspaper</p>	 <p>straight fingers close twice "close-close"</p>
		 <p>eyes closed</p>	 <p>18 open newspaper</p>		 <p>18 open newspaper</p>	 <p>curved movement</p>

Figure 6. Above, a paragraph from the Goldilocks story written in American Sign Language; below, the beginning of the Goldilocks story is taught to beginning readers using a combination of 1) the English gloss for the meaning of each sign, 2) photos from the ASL video, 3) the SignWriting of each sign on the video, and 4) an explanation in English teaching the SignWriting symbols to students.

A. Administrative

1. Title

Preliminary proposal for encoding the SignWriting script in the SMP of the UCS

2. Requester's name

Michael Everson

3. Requester type (Member body/Liaison/Individual contribution)

Individual contribution.

4. Submission date

2011-08-05

5. Requester's reference (if applicable)

6. Choose one of the following:

6a. This is a complete proposal

No.

6b. More information will be provided later

Yes.

B. Technical – General

1. Choose one of the following:

1a. This proposal is for a new script (set of characters)

Yes.

1b. Proposed name of script

SignWriting.

1c. The proposal is for addition of character(s) to an existing block

No.

1d. Name of the existing block

2. Number of characters in proposal

672.

3. Proposed category (A-Contemporary; B.1-Specialized (small collection); B.2-Specialized (large collection); C-Major extinct; D-Attested extinct; E-Minor extinct; F-Archaic Hieroglyphic or Ideographic; G-Obscure or questionable usage symbols)

Category A.

4a. Is a repertoire including character names provided?

Yes.

4b. If YES, are the names in accordance with the “character naming guidelines” in Annex L of P&P document?

Yes.

4c. Are the character shapes attached in a legible form suitable for review?

Yes.

5a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?

Michael Everson.

5b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.).

Michael Everson, FontLab.

6a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?

Yes.

6b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?

Yes.

7. Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)?

Yes.

8. Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at <http://www.unicode.org> for such information on other scripts. Also see UAX #44 <http://www.unicode.org/reports/tr44/> and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

See above.

C. Technical – Justification

1. Has this proposal for addition of character(s) been submitted before? If YES, explain.

No.

2a. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)?

Yes.

2b. If YES, with whom?

Valerie Sutton, Steve Slevinski.

2c. If YES, available relevant documents

3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included? Reference:

See above.

4a. The context of use for the proposed characters (type of use; common or rare)

Common.

4b. Reference

5a. Are the proposed characters in current use by the user community?

Yes.

5b. If YES, where? Reference:

Schools and daily life.

6a. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?

No.

6b. If YES, is a rationale provided?

6c. If YES, reference

7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?

Yes.

8a. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?

No.

8b. If YES, is a rationale for its inclusion provided?

8c. If YES, reference

9a. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?

No.

9b. If YES, is a rationale for its inclusion provided?

9c. If YES, reference

10a. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character?

No.

10b. If YES, is a rationale for its inclusion provided?

10c. If YES, reference

11a. Does the proposal include use of combining characters and/or use of composite sequences?

Yes.

11b. If YES, is a rationale for such use provided?

Yes.

11c. If YES, reference

See §4 above , and <http://www.evertype.com/standards/iso10646/pdf/signwritingsequences.txt>.

11d. Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?

No.

11e. If YES, reference

12a. Does the proposal contain characters with any special properties such as control function or similar semantics?

No.

12b. If YES, describe in detail (include attachment if necessary)

13a. Does the proposal contain any Ideographic compatibility character(s)?

No.

13b. If YES, is the equivalent corresponding unified ideographic character(s) identified? If YES, reference