

Organization of the SignWriting Symbol Set

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Valerie Sutton's 652 base SignWriting symbols have been organized into groups which can be divided into five main groups: handshapes, actions, directions of movement, nonmanual actions and locations. The largest and most complex is the ten sets of handshape symbols which include approximately 261 base symbols, followed by 205 sets of movement directions. As explained below, these 652 base symbols are enormously magnified by the number of variations for each symbol. Each base symbol can have up to 96 variations, but while most of the handshape symbols do have 96 variations, most of the other symbols have considerably fewer. This means that the total number of symbols is less than 62000, but certainly more than 25,000. However, an understanding of the 652 base symbols goes a long way toward understanding the system, since in almost all cases the possible variations are highly predictable. Even many of the base 652 are also predictably organized, which again helps in learning the system.

Most but not all handshapes have 96 handshape variations that encode rotations and flops of the hand. Flops are the result of the hand rotating on the long bone of the forearm. For example, if you place your hand so that the palm faces you, then without moving the hand to another position, you can rotate the hand so that the palm faces away from you, or in one of two sideways positions. In addition, by using the wrist or other joints, the palm can be rotated to face up or down. There are 6 theoretically possible floprs, although for a given handshape, some may not be possible or may be painful. A rotation mean that the hand stays in the same palm orientation relative to you, but that the shoulder and elbow joints move it so that the tips of the fingers point in various directions of a circle. Signwriting allows for 8 points along the radius of a circle for each hand, which makes for a total of 16 possible rotation points. Because of the way in which the knuckles, wrist, elbow and shoulder joints interact, it is not always possible to predict which hand can perform which flop and rotation combination, although in most if not all cases, only the right or left can perform a given flop and rotation combination for a given handshape.

The action variations are generally a question of the number, size, and direction of a particular action. For example, a touch may be a single touch or multiple touches. If there are multiple touches, they may repeat in exactly the same place or may move in some directions. Movements may also vary in the size of the movement, may have various angles, curves, crossings, zigzags, or rotations. Circular movement may be made in various orientations.

The detailed location values which are used only for research purposes generally show a small manikin which is seen from the back, so that the right side of the figure matches the right side of the viewer. In other words, these are not mirror images. A black dot indicates a location nearer to the viewer and a light dot one further away. Since the manikin faces away from the viewer, the black dots are generally on the back, and the light dots on the front.

The following table lists all of the base symbols in the order that they can be seen in a SignPuddle. This is followed by screen shots of the symbols in the same order.

Group Number	Sequence within Group	Base Description (from Slevinski's descriptions at https://github.com/Slevinski/signmaker/blob/gh-pages/config/messages.js)
1	1	index
	2	index on circle
	3	index on cup
	4	index on oval
	5	index on hinge
	6	index on angle
	7	index bent
	8	index bent on circle
	9	index bent on fist thumb under
	10	index raised knuckle
	11	index cup
	12	index hinge on fist
	13	index hinge on fist low
	14	index hinge on circle
2	1	index middle
	2	index middle on circle
	3	index middle bent
	4	index middle raised knuckles
	5	index middle hinge
	6	index up, middle hinge
	7	index hinge, middle up
	8	index middle unit
	9	index middle unit, index bent
	10	index middle unit, middle bent

	11	index middle unit, cup
	12	index middle unit, hinge
	13	index middle cross
	14	index middle cross on circle
	15	middle bent over index
	16	index bent over middle
3	1	index middle thumb
	2	index middle thumb on circle
	3	index middle straight, thumb bent
	4	index middle bent, thumb straight
	5	index middle thumb bent
	6	index middle hinge spread, thumb side
	7	index up, middle hinge, thumb side
	8	index up, middle hinge, thumb unit
	9	index hinge, middle up, thumb side
	10	index middle up spread, thumb forward
	11	index middle thumb cup
	12	index middle thumb circle
	13	index middle thumb hook
	14	index middle thumb hinge
	15	thumb between index middle straight
	16	index middle unit, thumb side
	17	index middle unit, thumb side unit
	18	index middle unit, thumb side bent
	19	middle thumb hook, index up
	20	index thumb hook, middle up
	21	index middle unit hinge, thumb side
	22	index middle cross, thumb side

	23	index middle unit, thumb forward
	24	index middle unit cup, thumb forward
	25	middle thumb cup, index up
	26	index thumb cup, middle up
	27	middle thumb circle, index up
	28	middle thumb circle, index hinge
	29	index thumb angle out, middle up
	30	index thumb angle in, middle up
	31	index thumb circle, middle up
	32	index middle thumb, unit hinge
	33	index middle thumb, angle out
	34	index middle thumb, angle
	35	middle thumb angle out, index up
	36	middle thumb angle out, index crossed
	37	middle thumb angle, index up
	38	index thumb hook, middle hinge
4	1	four fingers
	2	four fingers bent
	3	four fingers hinge
	4	four fingers unit
	5	four fingers unit split
	6	four fingers unit claw
	7	four fingers unit bent
	8	four fingers unit hinge
5	1	five fingers spread
	2	five fingers spread heel
	3	five fingers spread, four bent
	4	five fingers spread, four bent heel

	5	five fingers spread bent
	6	five fingers spread bent heel
	7	five fingers spread, thumb forward
	8	five fingers spread cup
	9	five fingers spread cup open
	10	five fingers spread hinge open
	11	five fingers spread oval
	12	five fingers spread hinge
	13	five fingers spread hinge, thumb side
	14	five fingers spread hinge, nothumb
	15	flat
	16	flat, between palm facings
	17	flat heel
	18	flat, thumb side
	19	flat, thumb side heel
	20	flat, thumb bent
	21	flat, thumb forward
	22	flat split index, thumb side
	23	flat split center
	24	flat split center, thumb side
	25	flat split center, thumb side bent
	26	flat split baby
	27	claw
	28	claw, thumb side
	29	claw, nothumb
	30	claw, thumb forward
	31	hook curlicue
	32	hook

	33	cup open
	34	cup
	35	cup open, thumb side
	36	cup, thumb side
	37	cup open, nothumb
	38	cup, nothumb
	39	cup open, thumb forward
	40	cup, thumb forward
	41	curlicue open
	42	curlicue
	43	circle
	44	oval
	45	oval, thumb side
	46	oval, nothumb
	47	oval, thumb forward
	48	hinge open
	49	hinge open, thumb forward
	50	hinge
	51	hinge small
	52	hinge open, thumb side
	53	hinge, thumb side
	54	hinge open, nothumb
	55	hinge, nothumb
	56	hinge, thumb side touches index
	57	hinge, thumb between middle ring
	58	angle
6	1	index middle ring
	2	index middle ring on circle

	3	index middle ring on hinge
	4	index middle ring on angle
	5	baby hinge
	6	index middle ring, bent
	7	index middle ring, unit
	8	index middle ring, unit hinge
	9	baby down
	10	baby down, ripple straight
	11	baby down, ripple curved
	12	baby down, others circle
	13	baby up
	14	baby up on fist thumb under
	15	baby up on circle
	16	baby up on oval
	17	baby up on angle
	18	baby raised knuckle
	19	baby bent
	20	baby touches thumb
	21	baby thumb
	22	baby thumb on hinge
	23	baby index thumb
	24	baby index thumb on hinge
	25	baby index thumb, index thumb angle out
	26	baby index thumb, index thumb angle
	27	baby index
	28	baby index on circle
	29	baby index on hinge
	30	baby index on angle

7	1	index middle baby
	2	index middle baby on circle
	3	index middle baby on hinge
	4	ring hinge
	5	index middle baby on angle
	6	index middle cross with baby
	7	index middle cross with baby on circle
	8	ring down
	9	ring down, index thumb hook, middle hinge
	10	ring down, middle thumb angle, index cross
	11	ring up
	12	ring raised knuckle
	13	ring baby
	14	ring baby on circle
	15	ring baby on oval
	16	ring baby on angle
	17	ring middle
	18	ring middle unit
	19	ring middle raised knuckles
	20	ring index
	21	ring thumb
	22	ring thumb hook
8	1	index ring baby
	2	index ring baby on circle
	3	index ring baby on curlicue
	4	index ring baby on hook out
	5	index ring baby on hook in
	6	index ring baby on hook under

	7	index ring baby on cup
	8	index ring baby on hinge
	9	index ring baby on angle out
	10	index ring baby on angle
	11	middle down
	12	middle hinge
	13	middle up
	14	middle up on circle
	15	middle raised knuckle
	16	middle up, thumb side
	17	middle thumb hook
	18	middle thumb baby
	19	middle baby
9	1	middle ring baby
	2	middle ring baby on circle
	3	middle ring baby on curlicue
	4	middle ring baby on cup
	5	middle ring baby on hinge
	6	middle ring baby on angle out
	7	middle ring baby on angle in
	8	middle ring baby on angle
	9	middle ring baby bent
	10	middle ring baby unit on claw
	11	middle ring baby unit on claw side
	12	middle ring baby unit on hook out
	13	middle ring baby unit on hook in
	14	middle ring baby unit on hook
	15	index hinge

	16	index thumb side
	17	index thumb side on hinge
	18	index thumb side, thumb diagonal
	19	index thumb side, thumb unit
	20	index thumb side, thumb bent
	21	index thumb side, index bent
	22	index thumb side, both bent
	23	index thumb side, index hinge
	24	index thumb forward, index straight
	25	index thumb forward, index bent
	26	index thumb hook
	27	index thumb curlicue
	28	index thumb curve, thumb inside
	29	index thumb curve, thumb inside on claw
	30	index thumb curve, thumb under
	31	index thumb circle
	32	index thumb cup
	33	index thumb cup open
	34	index thumb hinge open
	35	index thumb hinge large
	36	index thumb hinge
	37	index thumb hinge small
	38	index thumb angle out
	39	index thumb angle in
	40	index thumb angle
10	1	thumb
	2	thumb heel
	3	thumb side diagonal

	4	thumb side unit
	5	thumb side bent
	6	thumb forward
	7	thumb between index middle
	8	thumb between middle ring
	9	thumb between ring baby
	10	thumb under two fingers
	11	thumb over two fingers
	12	thumb under three fingers
	13	thumb under four fingers
	14	thumb over four raised knuckles
	15	fist
	16	fist heel
11	1	touch single
	2	touch multiple
	3	touch between
	4	grasp single
	5	grasp multiple
	6	grasp between
	7	strike single
	8	strike multiple
	9	strike between
	10	brush single
	11	brush multiple
	12	brush between
	13	rub single
	14	rub multiple
	15	rub between

	16	surface symbols
	17	surface between
12	1	squeeze large single
	2	squeeze small single
	3	squeeze large multiple
	4	squeeze small multiple
	5	squeeze sequential
	6	flick large single
	7	flick small single
	8	flick large multiple
	9	flick small multiple
	10	flick sequential
	11	squeeze flick alternating
	12	hinge movement, up down large
	13	hinge movement, up down small
	14	hinge movement, up sequential
	15	hinge movement, down sequential
	16	hinge movement, up down alternating large
	17	hinge movement, up down alternating small
	18	hinge movement, side to side scissors
	19	finger contact movement, wall plane
	20	finger contact movement, floor plane
13	1	single straight movement, wall plane small
	2	single straight movement, wall plane medium
	3	single straight movement, wall plane large
	4	single straight movement, wall plane largest
	5	single wrist flex, wall plane
	6	double straight movement, wall plane

	7	double wrist flex, wall plane
	8	double alternating movement, wall plane
	9	double alternating wrist flex, wall plane
	10	cross movement, wall plane
	11	triple straight movement, wall plane
	12	triple wrist flex, wall plane
	13	triple alternating movement, wall plane
	14	triple alternating wrist flex, wall plane
	15	bend, wall plane small
	16	bend, wall plane medium
	17	bend, wall plane large
	18	corner, wall plane small
	19	corner, wall plane medium
	20	corner, wall plane large
	21	corner, wall plane with rotation
	22	check, wall plane small
	23	check, wall plane medium
	24	check, wall plane large
	25	box, wall plane small
	26	box, wall plane medium
	27	box, wall plane large
	28	zigzag, wall plane small
	29	zigzag, wall plane medium
	30	zigzag, wall plane large
	31	peaks, wall plane small
	32	peaks, wall plane medium
	33	peaks, wall plane large
	34	travel rotation, single wall plane

	35	travel rotation, double wall plane
	36	travel rotation, alternating wall plane
	37	travel rotation, single floor plane
	38	travel rotation, double floor plane
	39	travel rotation, alternating floor plane
	40	travel shaking, wall plane
	41	travel arm spiral, wall plane single
	42	travel arm spiral, wall plane double
	43	travel arm spiral, wall plane triple
14	1	diagonal away movement small
	2	diagonal away movement medium
	3	diagonal away movement large
	4	diagonal away movement largest
	5	diagonal towards movement small
	6	diagonal towards movement medium
	7	diagonal towards movement large
	8	diagonal towards movement largest
	9	diagonal between away small
	10	diagonal between away medium
	11	diagonal between away large
	12	diagonal between away largest
	13	diagonal between towards small
	14	diagonal between towards medium
	15	diagonal between towards large
	16	diagonal between towards largest
15	1	single straight movement, floor plane small
	2	single straight movement, floor plane medium
	3	single straight movement, floor plane large

	4	single straight movement, floor plane largest
	5	single wrist flex, floor plane
	6	double straight movement, floor plane
	7	double wrist flex, floor plane
	8	double alternating movement, floor plane
	9	double alternating wrist flex, floor plane
	10	cross movement, floor plane
	11	triple straight movement, floor plane
	12	triple wrist flex, floor plane
	13	triple alternating movement, floor plane
	14	triple alternating wrist flex, floor plane
	15	bend, floor plane
	16	corner, floor plane small
	17	corner, floor plane medium
	18	corner, floor plane large
	19	check, floor plane
	20	box, floor plane small
	21	box, floor plane medium
	22	box, floor plane large
	23	zigzag, floor plane small
	24	zigzag, floor plane medium
	25	zigzag, floor plane large
	26	peaks, floor plane small
	27	peaks, floor plane medium
	28	peaks, floor plane large
	29	travel rotation single floor plane
	30	travel rotation double floor plane
	31	travel rotation alternating floor plane

	32	travel rotation single wall plane
	33	travel rotation double wall plane
	34	travel rotation alternating wall plane
	35	travel shaking floor plane
16	1	curve wall plane, quarter small
	2	curve wall plane, quarter medium
	3	curve wall plane, quarter large
	4	curve wall plane, quarter largest
	5	curve wall plane, half circle small
	6	curve wall plane, half circle medium
	7	curve wall plane, half circle large
	8	curve wall plane, half circle largest
	9	curve wall plane, 3 quarter circle small
	10	curve wall plane, 3 quarter circle medium
	11	hump wall plane small
	12	hump wall plane medium
	13	hump wall plane large
	14	loop wall plane small
	15	loop wall plane medium
	16	loop wall plane large
	17	loop wall plane small double
	18	wave wall plane 2 curves small
	19	wave wall plane 2 curves medium
	20	wave wall plane 2 curves large
	21	wave wall plane 3 curves small
	22	wave wall plane 3 curves medium
	23	wave wall plane 3 curves large
	24	curve then straight movement wall plane

	25	curved cross movement wall small
	26	curved cross movement wall medium
	27	rotation single wall plane
	28	rotation double wall plane
	29	rotation alternate wall plane
	30	shaking wall plane
17	1	curve hits front wall
	2	hump hits front wall
	3	loop hits front wall
	4	wave hits front wall
	5	rotation single hits front wall
	6	rotation double hits front wall
	7	rotation alternating hits front wall
	8	curve hits chest
	9	hump hits chest
	10	loop hits chest
	11	wave hits chest
	12	rotation single hits chest
	13	rotation double hits chest
	14	rotation alternating hits chest
	15	wave diagonal path small
	16	wave diagonal path medium
	17	wave diagonal path large
18	1	curve hits ceiling small
	2	curve hits ceiling large
	3	hump hits ceiling 2 humps small
	4	hump hits ceiling 2 humps large
	5	hump hits ceiling 3 humps small

	6	hump hits ceiling 3 humps large
	7	loop hits ceiling small single
	8	loop hits ceiling large single
	9	loop hits ceiling small double
	10	loop hits ceiling large double
	11	wave hits ceiling small
	12	wave hits ceiling large
	13	rotation single hits ceiling
	14	rotation double hits ceiling
	15	rotation alternating hits ceiling
	16	curve hits floor small
	17	curve hits floor large
	18	hump hits floor 2 humps small
	19	hump hits floor 2 humps large
	20	hump hits floor 3 humps small
	21	hump hits floor 3 humps large
	22	loop hits floor small single
	23	loop hits floor large single
	24	loop hits floor small double
	25	loop hits floor large double
	26	wave hits floor small
	27	wave hits floor large
	28	rotation single hits floor
	29	rotation double hits floor
	30	rotation alternating hits floor
19	1	curve floor plane small
	2	curve floor plane medium 1
	3	curve floor plane medium 2

	4	curve floor plane large
	5	curve floor plane combined
	6	hump floor plane small
	7	loop floor plane small
	8	wave floor plane snake
	9	wave floor plane small
	10	wave floor plane large
	11	rotation single floor plane
	12	rotation double floor plane
	13	rotation alternating floor plane
	14	shaking parallel floor
20	1	arm circle wall small single
	2	arm circle wall medium single
	3	arm circle wall small double
	4	arm circle wall medium double
	5	arm circle hits wall small single
	6	arm circle hits wall medium single
	7	arm circle hits wall large single
	8	arm circle hits wall small double
	9	arm circle hits wall medium double
	10	arm circle hits wall large double
	11	wrist circle front wall single
	12	wrist circle front wall double
	13	wrist circle hits wall single
	14	wrist circle hits wall double
	15	finger circles wall single
	16	finger circles wall double
	17	finger circles hits wall single

	18	finger circles hits wall double
	19	arrowheads small
	20	arrowheads large
21	1	fast
	2	slow
	3	tense
	4	relaxed
	5	same time
	6	same time alternating
	7	every other time
	8	gradual
22	1	head
	2	head rims
	3	head movement straight wall plane
	4	head movement tilts wall plane
	5	head movement straight floor plane
	6	head movement curves wall plane
	7	head movement curves floor plane
	8	head movement circles
	9	face direction positions, nose forward tilting
	10	face direction positions, nose up or down
	11	face direction positions, nose up or down tilting
23	1	eyebrows straight up
	2	eyebrows straight neutral
	3	eyebrows straight down
	4	dreamy eyebrows neutral down
	5	dreamy eyebrows down neutral
	6	dreamy eyebrows up neutral

	7	dreamy eyebrows neutral-up
	8	forehead neutral
	9	forehead contact
	10	forehead wrinkled
	11	eyes open
	12	eyes squeezed
	13	eyes closed
	14	eye blink single
	15	eye blinks multiple
	16	eyes half open
	17	eyes wide open
	18	eyes half closed
	19	eyes widening movement
	20	eye wink (squeezed eye blink)
	21	eyelashes up
	22	eyelashes down
	23	eyelashes fluttering
	24	eyegaze straight wall plane
	25	eyegaze straight wall double
	26	eyegaze straight wall alternate
	27	eyegaze straight floor plane
	28	eyegaze straight floor double
	29	eyegaze straight floor alternate
	30	eyegaze curved wall plane
	31	eyegaze curved floor plane
	32	eyegaze circles wall plane
24	1	cheeks puffed
	2	cheeks neutral















	3	cheeks sucked
	4	tense cheeks high
	5	tense cheeks middle
	6	tense cheeks low
	7	ears
	8	nose neutral
	9	nose contact
	10	nose wrinkles
	11	nose wiggles
	12	air blowing out
	13	air sucking in
	14	air blow small rotations
	15	air suck small rotations
	16	breath exhale
	17	breath inhale
25	1	mouth closed neutral
	2	mouth closed forward
	3	mouth closed contact
	4	mouth smile
	5	mouth smile wrinkled
	6	mouth smile open
	7	mouth frown
	8	mouth frown wrinkled
	9	mouth frown open
	10	mouth open circle
	11	mouth open forward
	12	mouth open wrinkled
	13	mouth open oval

	14	mouth open oval wrinkled
	15	mouth open oval yawn
	16	mouth open rectangle
	17	mouth open rectangle wrinkled
	18	mouth open rectangle yawn
	19	mouth kiss
	20	mouth kiss forward
	21	mouth kiss wrinkled
	22	mouth tense
	23	mouth tense forward
	24	mouth tense sucked
	25	lips pressed together
	26	lip lower over upper
	27	lip upper over lower
	28	mouth corners
	29	mouth wrinkles single
	30	mouth wrinkles double
26	1	tongue sticks out far
	2	tongue licks lips
	3	tongue tip between lips
	4	tongue tip touches inside mouth
	5	tongue inside mouth relaxed
	6	tongue moves against cheek
	7	tongue center sticks out
	8	tongue center inside mouth
	9	teeth
	10	teeth movement
	11	teeth on tongue

	12	teeth on tongue movement
	13	teeth on lips
	14	teeth on lips movement
	15	teeth bite lips
	16	jaw movement wall plane
	17	jaw movement floor plane
	18	neck
	19	hair
	20	excitement
27	1	shoulder hip spine
	2	shoulder hip positions
	3	shoulder hip move wall plane
	4	shoulder hip move floor plane
	5	shoulder tilts (from waist)
	6	torso straight stretch wall
	7	torso curved bend wall
	8	torso twist floor plane
	9	upper body tilts (from hip joints)
28	1	limb combinations
	2	limb length 1
	3	limb length 2
	4	limb length 3
	5	limb length 4
	6	limb length 5
	7	limb length 6
	8	limb length 7
	9	fingers
29	1	location space wall plane

	2	location space floor plane
	3	location height
	4	location width
	5	location depth
	6	location head neck
	7	location torso
	8	location limbs s
30	1	comma
	2	period
	3	semicolon
	4	colon
	5	parentheses












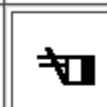






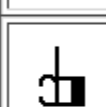
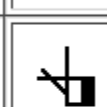

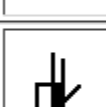
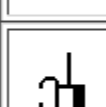
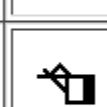


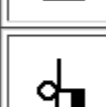


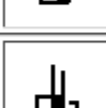
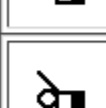
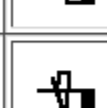
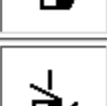
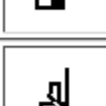

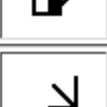
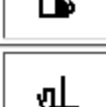

Group 1 (S100) index handshapes:

Group 2 (S10e) index middle handshapes:

Group 3 (S11e) index middle thumb handshapes:































			
			
			
			
			
			
			
			
			
			

Group 4 (S144) Four fingers handshapes


















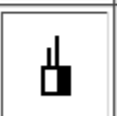






Group 5 (S14c) five fingers handshapes




















Group 6 (S186) baby finger handshapes






















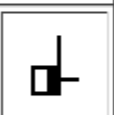


















Group 7 (S1a4) ring finger handshapes

















Group 8 (S1ba) middle finger handshapes

Group 9 (S1cd) index thumb handshapes










Group 10 (S1f5) thumb handshapes












































Group 11 (S205) contact action

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Group 12 (S216) finger movement action




































Group 13 (S22a) straight wall plane action (direction of motion)

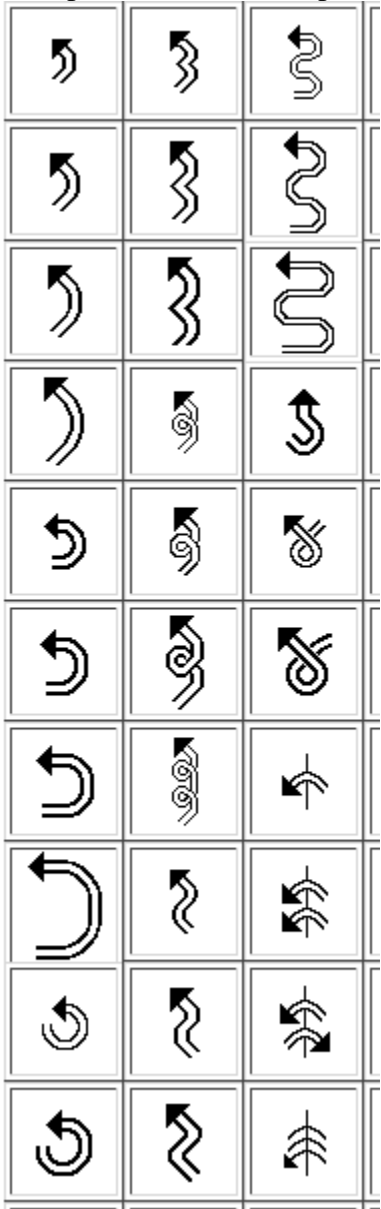
Group 14 (S255) straight diagonal plane action (direction of motion)


















Group 15 (S265) straight floor plane action (direction of motion)































Group 16 (S288) curves parallel wall plane action (direction of motion)














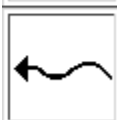


Group 17 (S2a6) curves hit wall plane action (direction of motion)















Group 18 (S2b7) curves hit floor plane action (direction of motion)

Group 19 (S2d5) curves parallel floor plane action (direction of motion)

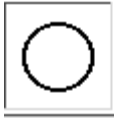

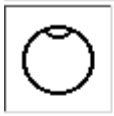

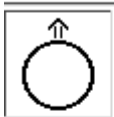



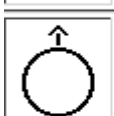

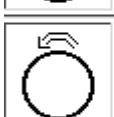

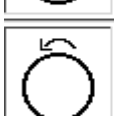

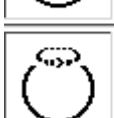

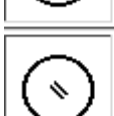

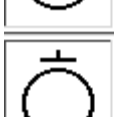

Group 20 (S2e3) circles action (direction of motion)

































Group 21 (S2f7) dynamics & timing fast, slow, simultaneous, alternating

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Group 22 (S2ff) head head locations and nonmanual































Group 23 (S30a) brow eyes eyegaze head locations and nonmanual





















Group 24 (S32a) cheeks ears nose breath head locations and nonmanual

Group 25 (S33b) mouth lips head locations and nonmanual

Group 26 (S359) tongue teeth chin neck head locations and nonmanual

Group 27 (S36d) trunk locations



Group 28 (S376) limbs locations



Group 29 (S37f) detailed locations



Group 30 (S387) punctuation

