

SignAnimating

3-Symbols

(Non-official proposals based on Lessons in SignWriting. Text book, by Valerie Sutton, Center for Sutton Movement Writing, Inc. 2014)



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SignAnimating. 3-Symbols

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This book was prepared with SignWriter Studio™ version 1.2.2 © 2009 created by Jonathan Duncan. It can be downloaded at <http://signwriterstudio.com/>

This manual is posted on the web:

<http://www.signwriting.org/symposium/presentation0020.html>

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Introduction



In this document, we suggest conventions on how SignWriting symbols may be converted to SignAnimating symbol sequences. We believe that a good animation should be complete enough to allow reverting to SignWriting without ambiguity. No suggestion is definitive until SignWriters reflect on it, improve it and agree on its official usage. We view SignAnimating like a form of subtitling; unlike an avatar which represents the human body, it remains based on SignWriting conventions.

This document follows the same structure and examples as Lessons in SignWriting. Text book (2014). Use it as an official reference while reading the conversion of symbols from SignWriting to SignAnimating. Most of concepts presented in the textbook are repeated and illustrated here. Entire sections like the hand shapes symbols are skipped when the SignAnimating and the SignWriting representation are the same. Examples and specific details from SignWriting e-lessons by Valerie Sutton are added. Several concepts and pictures from the SignWriting Reference Manual 2. SignWriting Hand Symbols, ISWA 2010 by Valerie Sutton and Adam Frost were integrated. Illustrations by Parkhurst, Dianne and Parkhurst, Stephen (2010) A Cross-Linguistic Guide to SignWriting®. A phonetic approach were integrated in this text.

This document suggests standards on how best to represent individual symbols with SignWriting animation. It does not describe complete signs representation. Symbols will be expressed in black on a white background. A movement may be expressed by 2 or more frames. Animation is more continuous when more frames are displayed in rapid succession. In this document, we will use a few frames to present the general idea and let the SignWriters add more frames in their animations if needed.

SignWriting is normally written in columns. Signs are represented horizontally in this document to ease their layout in the written text.

Most movement and speed symbols are replaced by displacement of symbols during the animation. SignAnimating follows all SignWriting rules except for one: symbols change of size depending of their proximity to the body.

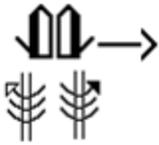


Refer to [SignAnimating 1-Techniques](#) for a step-by-step instructions on how to produce SignAnimating video or GIF files.

Refer to [SignAnimating 2-Design](#) for a reflection on several possible layouts of SignAnimating and the advantages and limitations of each one.

Refer to [SignAnimating 4-SpeechAnimating](#) for a reflection on how to animate SpeechWriting.

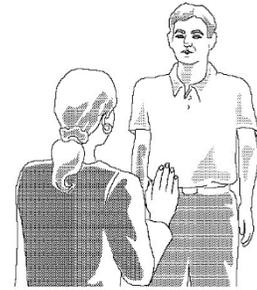
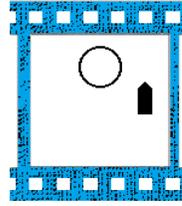
André Lemyre



1. Viewpoints



By convention, SignAnimating, like SignWriting, is written from the Expressive view point. It is the view point of the signing person seeing her/his own hands. The right side of the SignWriting corresponds to the right side of the signer. Unless specified otherwise, the examples of this document are from the Expressive view point.

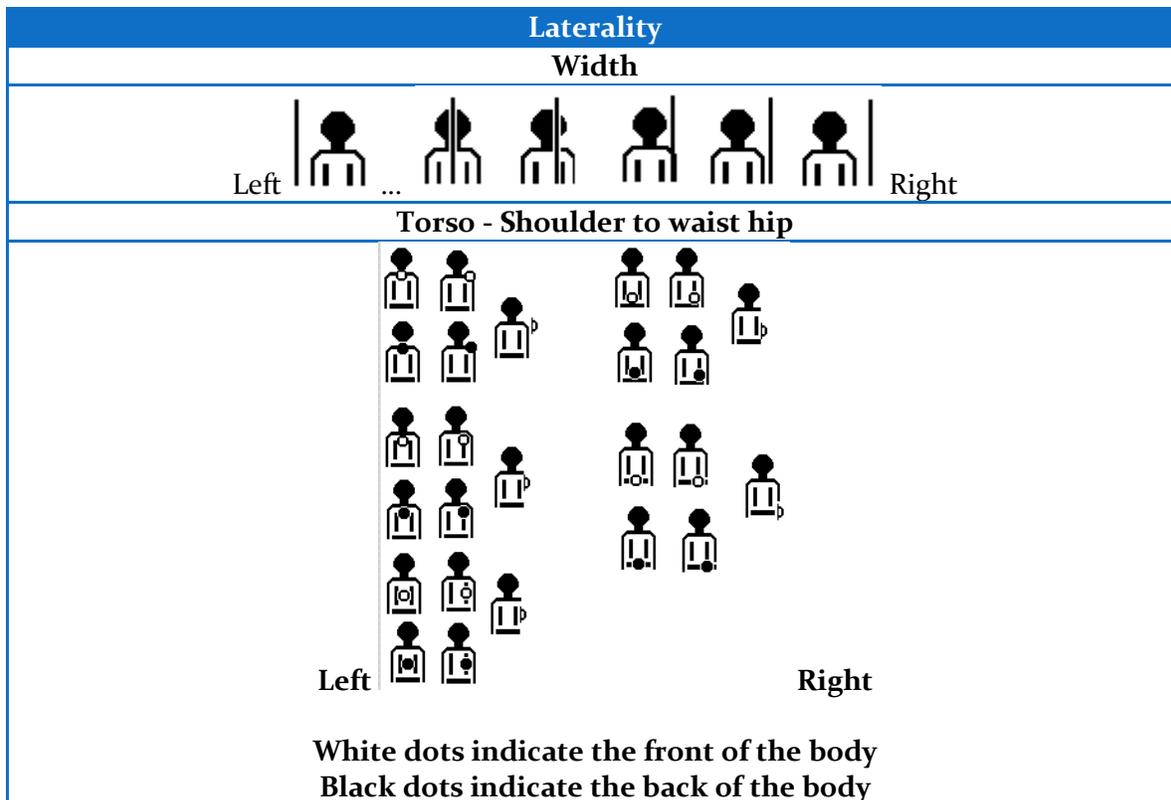


Front and Top View

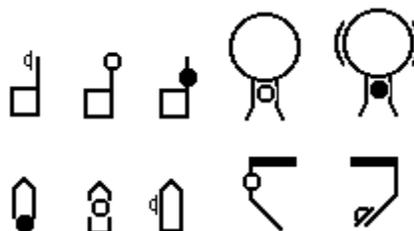
SignSpelling is used in SignAnimating to conceptualize the hand positions and movement in the signing space. However, these symbols are not used in the animation.

Front view relatively to the Wall plane				Top view relatively to the Floor plane			

Height			Depth	
		Up		Front
		Down		
				Back



Other SignSpelling symbols are used to describe precise locations, but they are not displayed in SignAnimating.



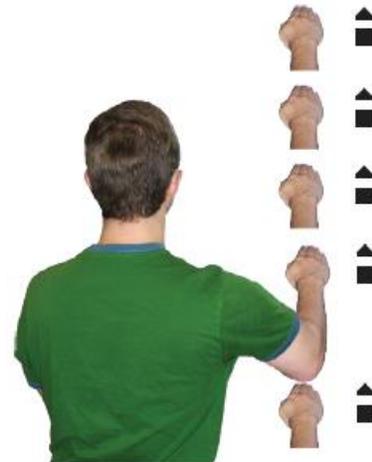
Wall Plane

SignAnimating follows all SignWriting rules except for one: hand shapes are zoomed in or out depending of their proximity to the body.



Floor Plane

Hand symbols parallel to the Floor look the same whether they are high above the head, in the middle in front of the chest, or low at hip level. It remains the same symbol no matter how high or low it is.



Symbols Overlap



With some simple hand shapes, it is clear which hand is closer from the signer with the Expressive view point.

Some signs are hard to read, without added details, such as Surface Symbols, which show that one hand is over, or under, or to the side of the other hand. Surface Symbols are not used often. They are only added on rare occasions when the sign cannot be read without the added information, such as classifiers.



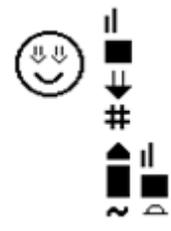
There are two kinds of Surface Symbols, relating to two different planes. A single-lined surface means that the hand is parallel with the floor. A double-lined surface means that the hand is parallel with the wall. The little curve shows the side of the surface that is being contacted.

In SignAnimating, the Surface Parallel with the Floor symbols are rarely required, the hand shapes are clearly above one another or left and right.

Surface Parallel with the Floor	
	1. On Top Of A Surface
	2. Under Neath A Surface
	3. To The Left Of A Surface
	4. To The Right Of A Surface
	5. Through Two Surfaces That Are "Above & Below"
	6. Through Two Surfaces That Are To The "Right & Left"

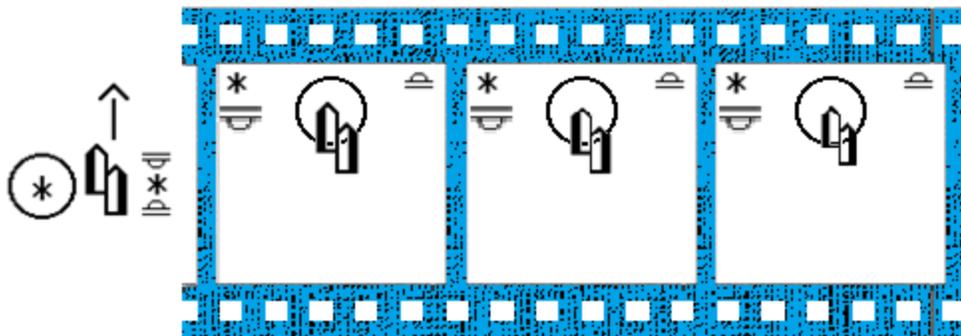
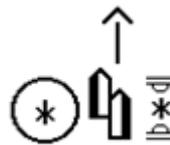
Surface Parallel with the Wall	
	1. Front Portion of a Surface (the surface that is away from the chest)
	2. Back Portion of a Surface (the surface that is towards the chest)
	3. To The Left Of A Surface
	4. To The Right Of A Surface
	5. Through Two Surfaces That Are "In Front & In Back"
	6. Through Two Surfaces That Are To The "Right & Left"

SignWriting example: The right hand starts high and then moves down, finishing on top of the left hand. If the right hand shape were placed directly on top of the left, the two hand shapes would blend and the position would be unreadable. So, instead the right hand shape is placed to the side, so both hands can be read easily. The “Over or on top of” Surface Symbol placed near the right hand tells the reader that it is really on top of the left.

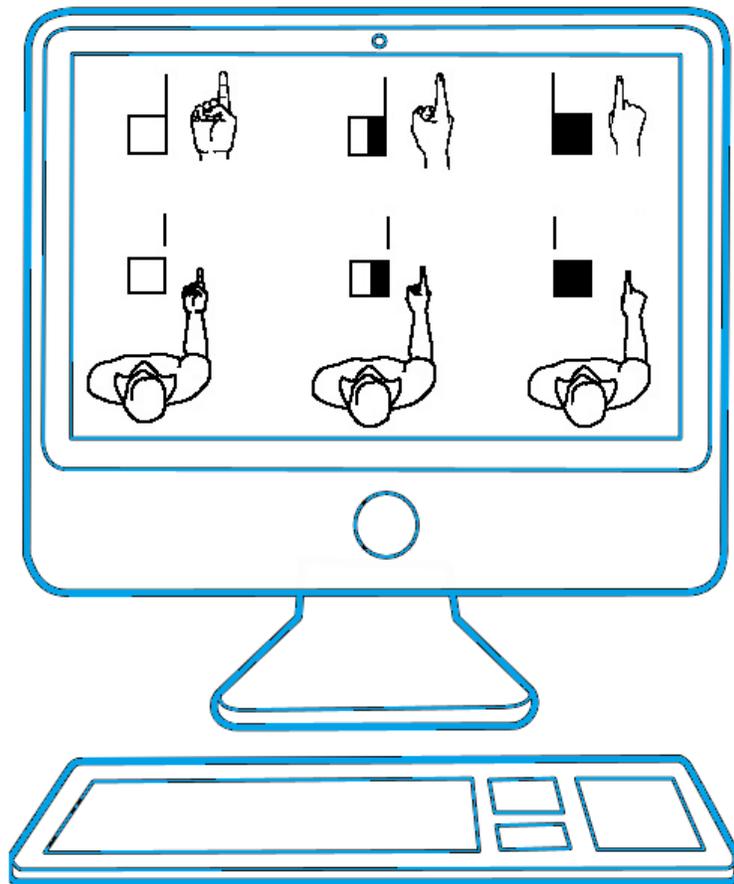


SignAnimating example: The Surface Parallel with the Wall symbols are required to express which hand is closer and which is further from the body. The symbol representing closer to the body is zoomed in for better readability. One symbol is in the left to corner and the other is to the right top corner.

The portion of the right hand that is away from the chest, is contacting the portion of the left hand that is towards the chest.



2. Hands



Basic Hand Shapes

SignAnimating uses the same root shapes and the same hand shapes as SignWriting.

Symbol	Root Shape
	Tight Fist Tight Fist: At least 1 finger touches palm.
	Fist Thumb Under Tight Fist: At least 1 finger touches palm with thumb under it.
	Fist Thumb Across Tight Fist: At least 1 finger rests on top of thumb across palm.
	Circle At least 1 fingertip touches thumb tip in a curve or at least 1 curved finger is close to palm of hand.
	Curlicue At least 1 fingertip touches inside middle of thumb.
	Claw At least 1 finger is bent at Middle Joint & Tip Joint.
	Hook At least 1 finger is bent at Middle Joint, touching thumb tip.
	Cup At least 1 finger is curved at the Middle Joint & Tip Joint. There is NO bend or curve at the Knuckle Joint.
	Oval At least 1 finger is curved at all three joints: Knuckle Joint, Middle Joint and Tip Joint.
	Hinge At least 1 finger bends at the Knuckle Joint, while the Middle Joint and Tip Joint lock completely straight.
	Angle The Hinge, with fingertips and thumb tip touching.
	Flat Thumb Across Thumb across palm, four fingers straight up with no bends.
	Flat Five fingers straight up with no bends.

Hand Shapes Examples

Tunisian Arabic Alphabet Chart written in SignWriting and illustrated by Dali Balti.

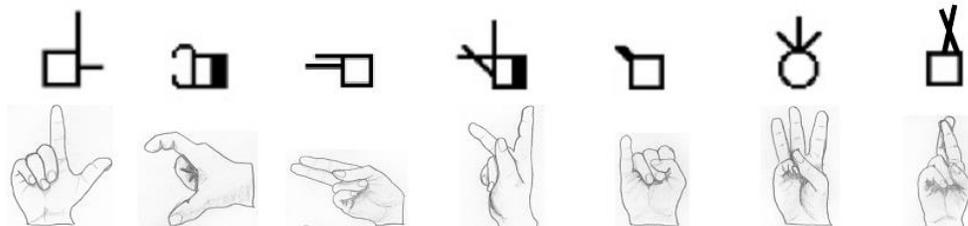
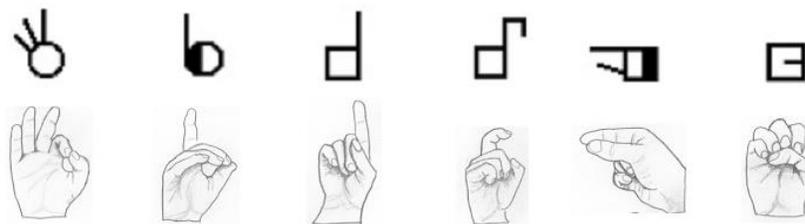
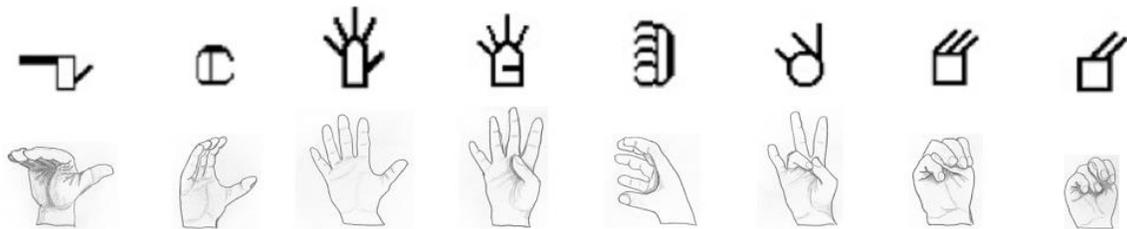
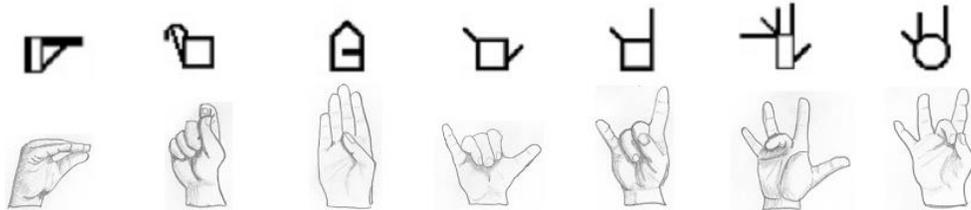
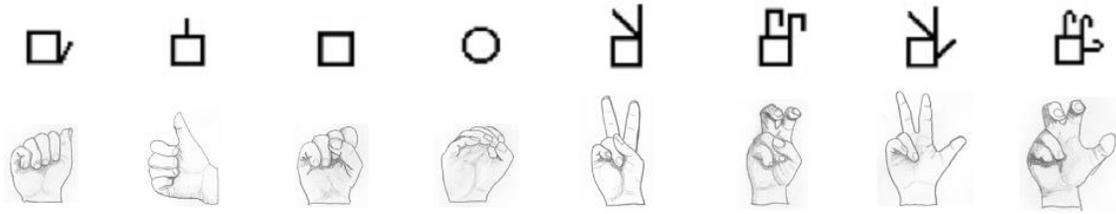
أ	ب	ت	ث	ج	د	ذ
ر	ز	س	ص	ض	ط	ظ
ق	ف	غ	ع	ح	خ	د
ي	و	ه	ن	م	ل	ك

Tunisian Arabic Numbers Chart written in SignWriting and illustrated by Dali Balti.

١	٢	٣	٤	٥
٦	٧	٨	٩	٠

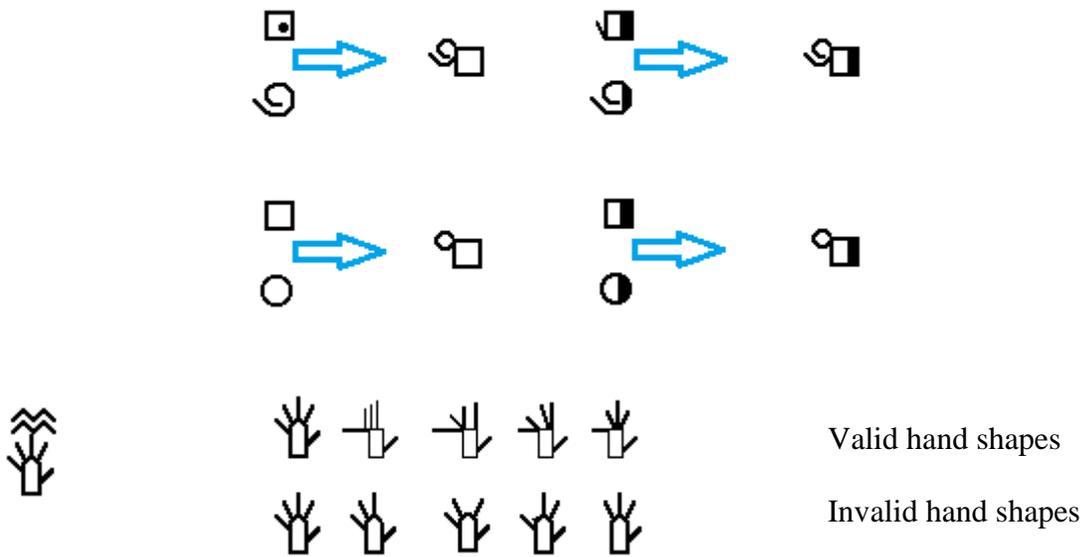
ASL Hand Shape Chart written in SignWriting and illustrated by Cherie Wren at:

<http://www.SignWriting.org/usa>



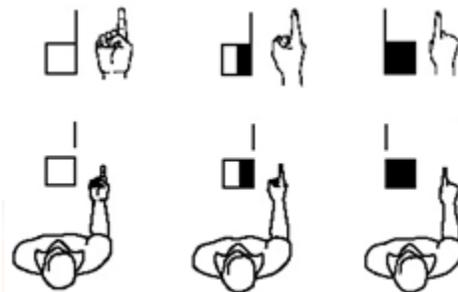
New Hand Shape Creation

Hand shapes may be created to represent a configuration that does not exist in the 2010 International SignWriting Alphabet. It may also occur to represent a hand shape specific to one sign language or an intermediary hand shape during a movement. To invent a hand shape, select the required root hand shape and add fingers in the required orientation. Root shapes are determined by the shape of the lowest finger in the hand shape. Hand shapes can be combined. However, if a hand shape exists, it shall be used instead of inventing a symbol.



Hand Perspectives

SignAnimating uses the same hand perspectives as SignWriting.



List of Hand Shapes

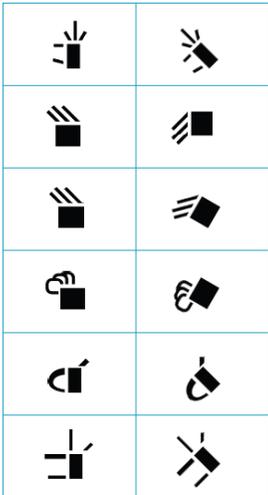
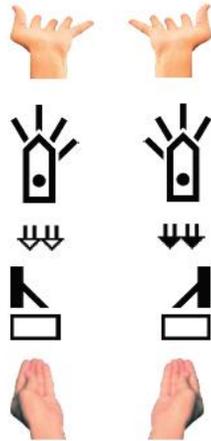
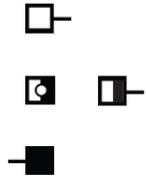
Hand shape animations simply represent the hand shapes the same way as in SignWriting. Refer to SignWriting. Sign Languages Are Written Languages! Manual 2: SignWriting Hand Symbols by Valerie Sutton and Adam Frost. It is also available through animated gif files at <http://www.signwriting.org/lessons/iswa/> .

Several Ways to Represent the Same Hand Shapes

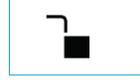
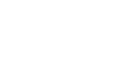
Some flat hand and fist shapes can be expressed in several ways according to the 2010 International SignWriting Alphabet.

Heel of hand or top view with flat hands and fists.			
There are 2 ways to write some positions with flat hands and fists.			
Flat hands with the fingers pointing straight forward, with the arm parallel to the Floor Plane, can be written from the Front View with the Heel of Hand, or from the traditional Top View.		Fists with the knuckles directed straight forward, with the arm parallel to the Floor Plane, can be written from the Front View with the Heel of Hand, or from the traditional Top View.	
Front View	Top View	Front View	Top View

There are different ways to write the same position. It is suggested to point the tip of the fingers in meaningful directions. Horizontal hand shapes with flexed fingers may be written with a slant such that fingers point downward.

Top view of the back of the hand	Angle Hand Symbols	The Thumb
<p>The top view of the back of the hand can be written at a slant. Some writers feel this looks more like real life because the fingers are directed down.</p> <p>Be careful with directional signs where this slant may imply pointing to an object in the signer space or another person.</p>	<p>When writing Angle Hands, write the direction of the fingers based on what “feels correct” for the meaning of the sign. Then look at your palm. Where is the palm facing? If the palm is facing the ceiling, then it is parallel to the floor. It will be white with a space at the knuckle joint.</p>	<p>The side view of the Thumb Hand can be written in two ways.</p> <ol style="list-style-type: none"> 1. The dot for the thumb projecting directly toward the reader is the official symbol of the ISWA 2010. 2. Some writers choose to write a line for the thumb to the side, rather than the dot. The line for the thumb is always placed on the dark side of the symbol.
		<p>Both methods mean the same thing and are correct.</p> 

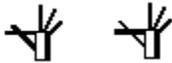
Here are the hand shapes which may be written with a slant such that fingers point downward.

Group 1: Index All Hands With One Action Finger: The Index Finger	Group 2: Index Middle All Hands With Two Action Fingers: Index Finger & Middle Finger	Group 3: Index Middle Thumb All Hands With Three Action Fingers: Index Finger, Middle Finger & Thumb	Group 4: Four Fingers All Hands With Four Action Fingers Thumb Must Be Across Palm
			
			
			
			
			
			
			
			
			
			
			
			

Group 5: Five Fingers All Hands With Five Action Fingers 5 Fingers Spread or Together		Group 6: Baby Finger Hands That Focus on the Little Finger Little Finger Down or Up		Group 7: Ring Finger Hands That Focus on the Ring Finger Ring Finger Down or Up		Group 9: Index Thumb All Hands With Two Action Fingers: Index Finger & Thumb	

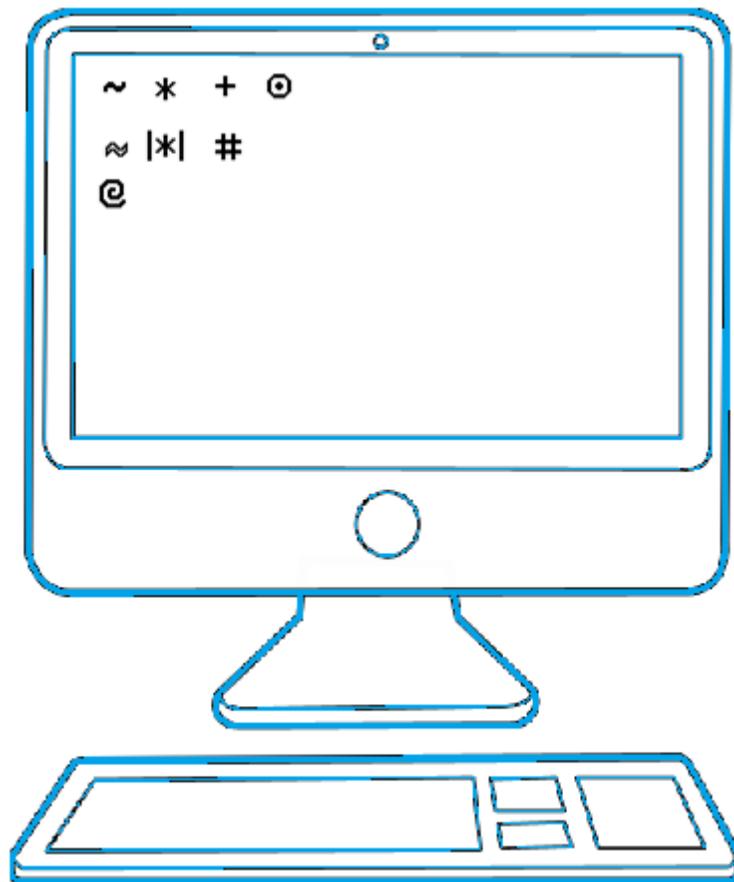
Group 8: Middle Finger
Hands That Focus on the Middle Finger
Middle Finger Down or Up
 none

Finger thickness

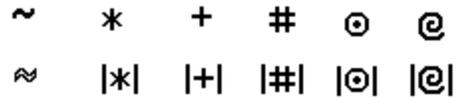


Some hand shapes indicate if the thumb is at the exterior of the hand with a thicker thumb or if the index is at the exterior with a thicker index.

3. Contact



Contact symbols that cannot be animated. It is suggested to always keep them for at least one frame when the contact occurs.



This ensures that the animation could be understood and written without loss of information. They may be implicit and obvious for a Deaf or an experienced sign reader, but may be insufficient for less experienced viewers.

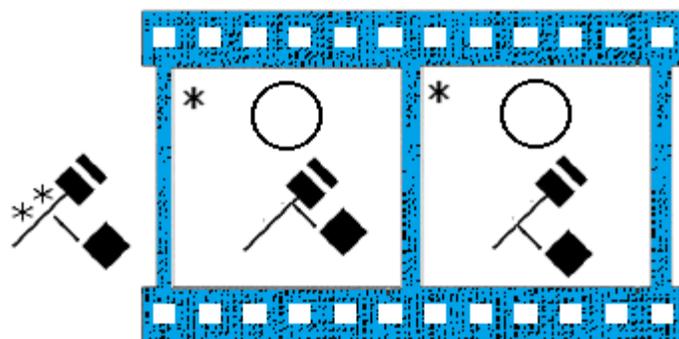
Contact symbols may be confined always in the top left corner of the animation. It corresponds to the non-dominant hand side. This corner is less used for hand shapes. This provides uniformity through the animation.

Animation allows the viewer to see the hand shapes before they overlap. Two overlapped hand shapes in contact may not be readable in a frame. The purpose of such frame would be to indicate when and where the contact occurs with known hand configurations.

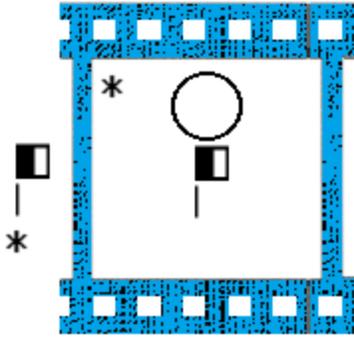
Repeated movements may contain intermediary transition positions to represent the return to the initial position.

Contact with Body and Limb

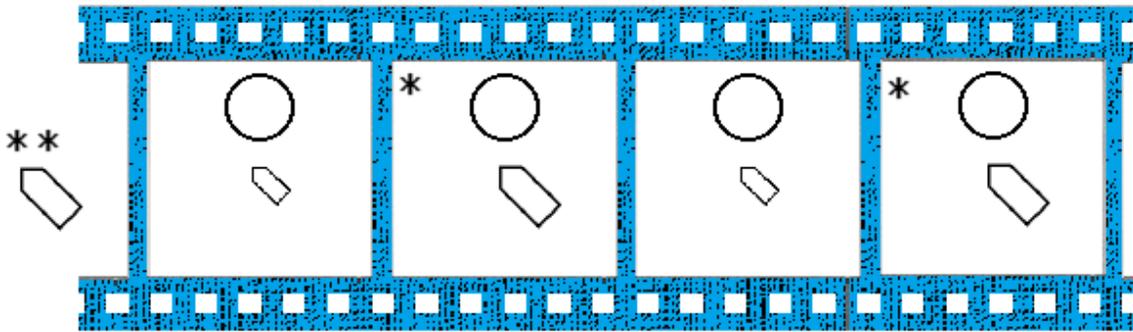
Sometimes the hands touch the body, shoulders or a limb. When needed, the limb or the shoulder is displayed.



Time (LSE)



Me (LSE)

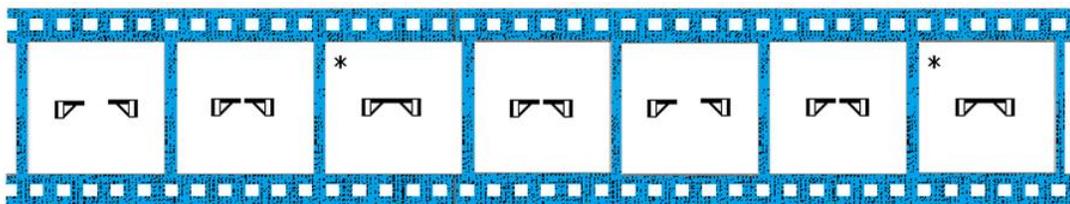


My (LSE)

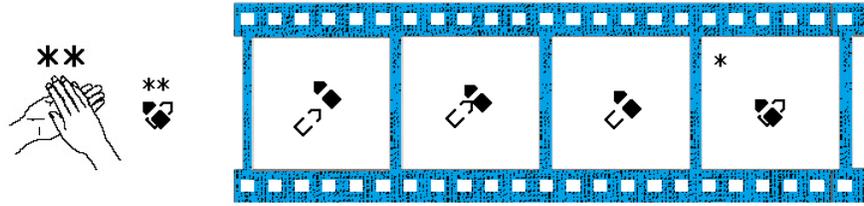
Touch



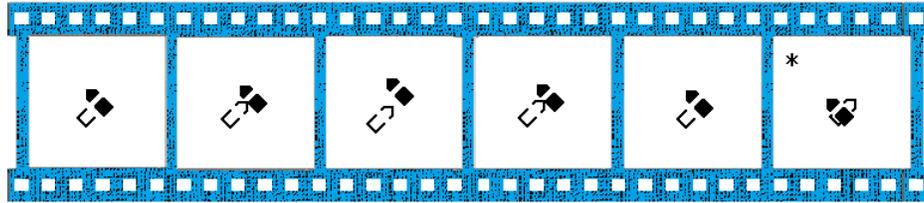
Touch is defined as the hand gently contacting another part of the body. Touch Contact is written with an asterisk in the left top corner of the animation when the contact occurs. It is also the only way to indicate that the hand shape touches the chest.



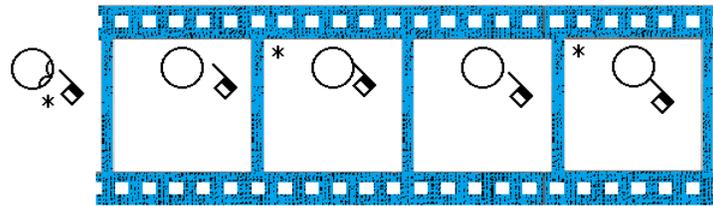
More (ASL)



School (ASL)



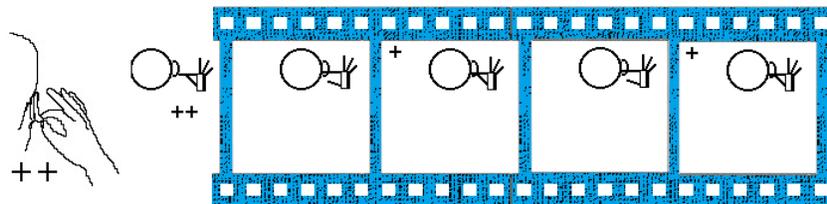
Deaf (ASL)



Grasp



Grasp is defined as the hand grasping a part of the body or a piece of clothing. Grasp Contact is written with a plus sign.

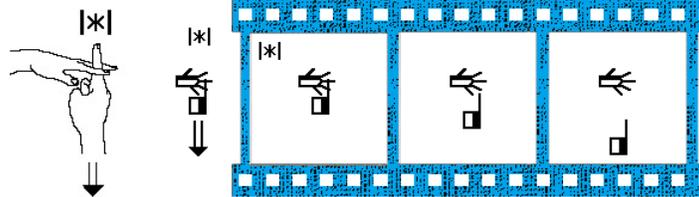


Ear ring (ASL)

Between



Between is defined as touching between two parts of the body, usually between fingers. Between Contact is written with an asterisk between two lines.



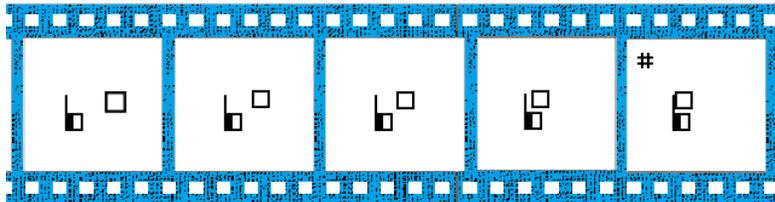
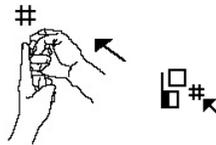
Disappear (ASL)

Strike



Strike is defined as the hand contacting a surface with force. Strike Contact is written with two lines crossing two lines.

In the example, the right hand moves laterally and changes size. There is no upward movement, as implied by the arrow sign which is parallel to the floor plane.



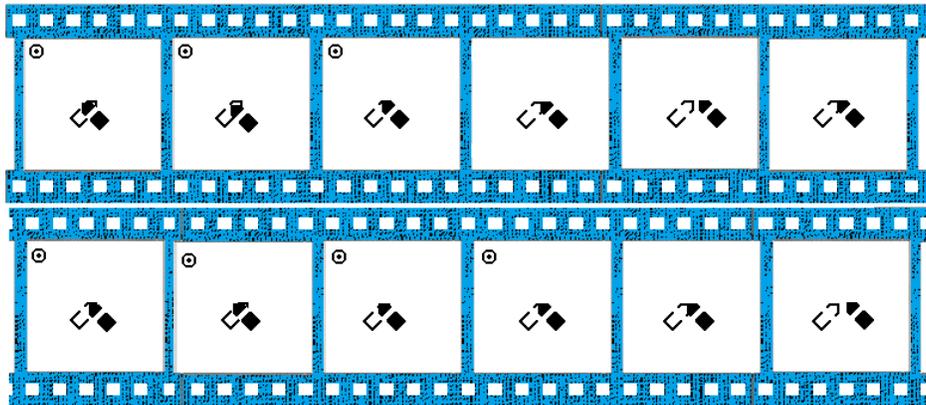
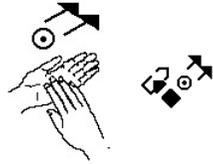
Hit (ASL)

Brush

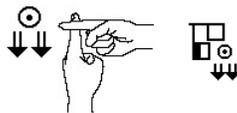


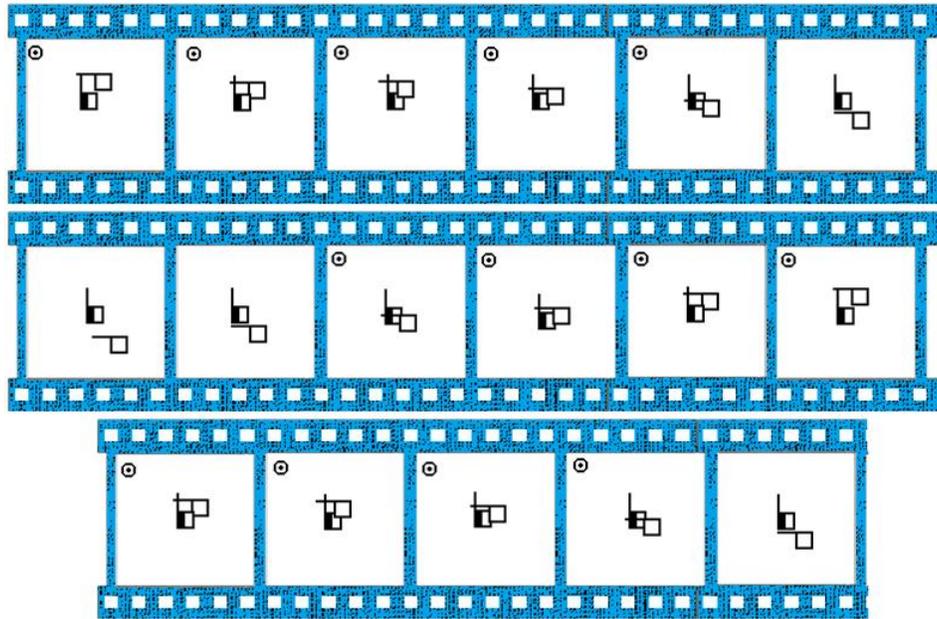
Brush is defined as movement that first contacts and then moves off a surface. Brush Contact is written with a circle with a dark dot in the center.

In the example, the right hand moves laterally and changes size. There is no upward movement, as implied by the arrow sign which is parallel to the floor plane.



Excuse me (ASL)



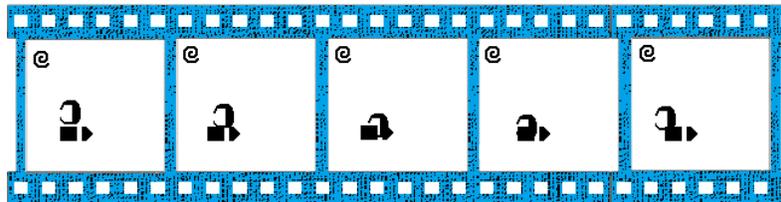


Monthly (ASL)

Circular Rub



Rub is defined as contact that moves, but stays on the surface. Rubbing contact in a circle is written with a spiral symbol.



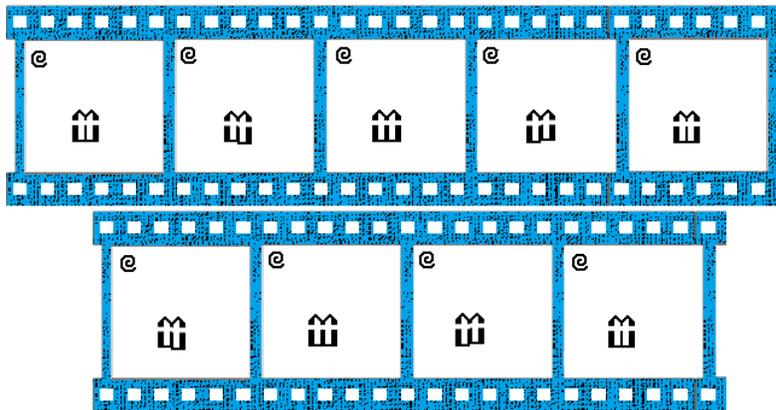
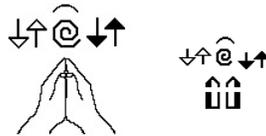
Chocolate (ASL)

Straight Rub



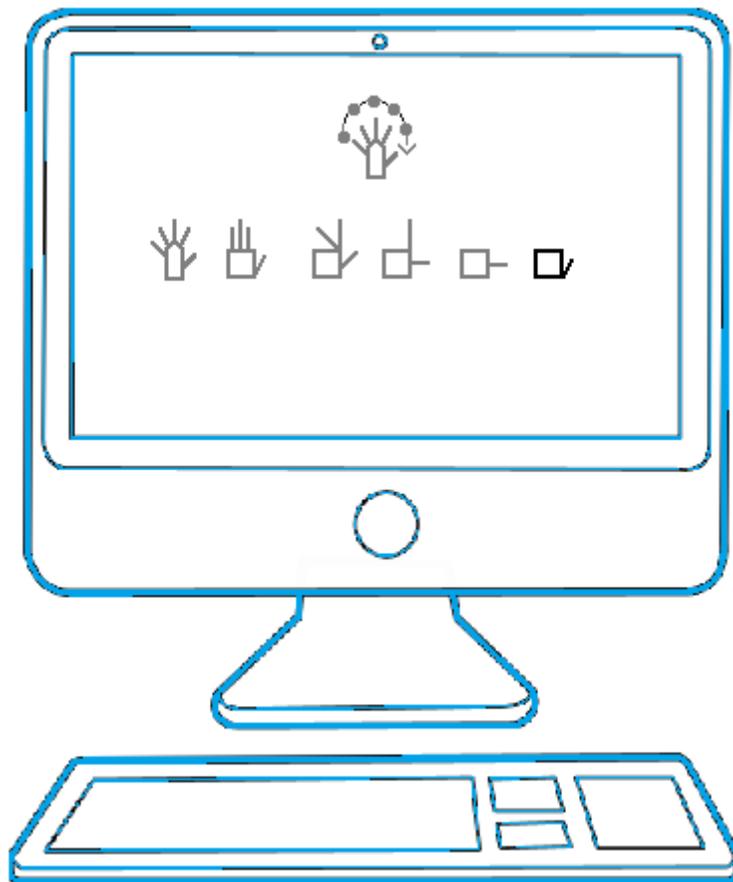
When the Rub Contact symbol is connected with an arrow, it rubs in a straight line (not in a circle). It moves in the direction of the arrow. Straight Rubbing Contact is written with the same spiral symbol, but the spiral symbol is connected with a straight arrow.

In the example the right hand moves forward and changes of size. There is no upward movement implied by the arrow sign which is parallel to the floor plane.



Eager (ASL)

4. Finger Movements



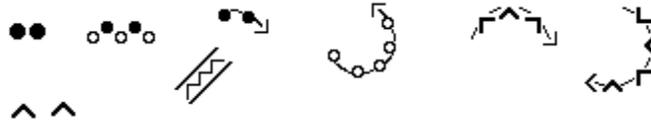
Almost all finger movement symbols can be animated. They do not need to be represented during an animation.



The flexion of fingers may be represented by several frames.

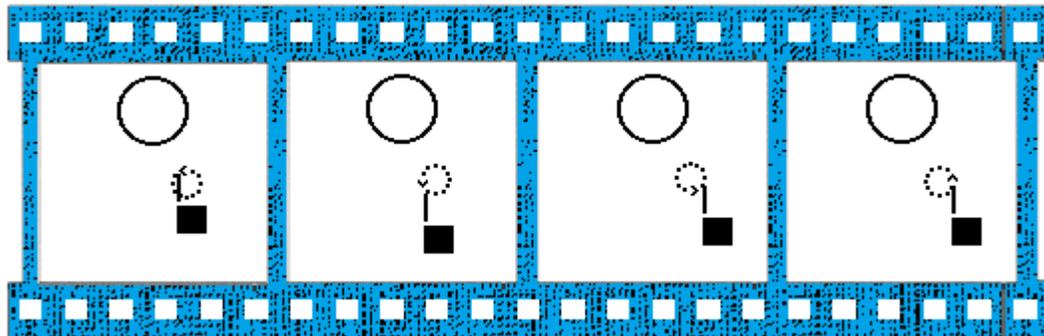


When a finger movement symbol is repeated, the motion is repeated for the same fingers or applied to other fingers.



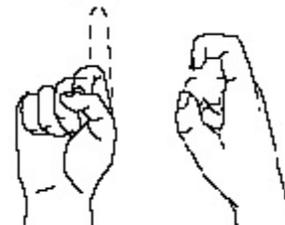
Exceptions:

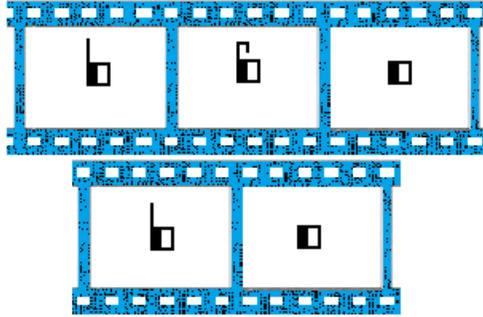
Finger rotation symbols may need to be displayed if the finger motion is too subtle to be represented in the animation. A succession of symbols with a moving arrow may be used to indicate repetition.



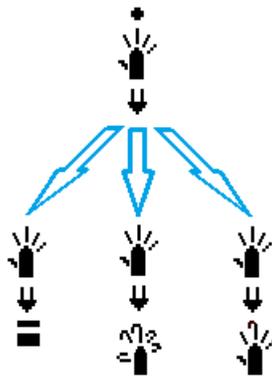
Middle-Joint Closes

When the middle-joint of the finger closes (bends down or in), this closing finger movement is written with a dark dot. The dot is placed near the finger joint that does the movement. Two dots mean two closings. The Middle-Joint Close symbol is not displayed in SignAnimating. It is represented by hand shapes with opened and closed fingers. The number of finger positions depends on the movement. If the animation frame rate allows it, half opened finger may be displayed.





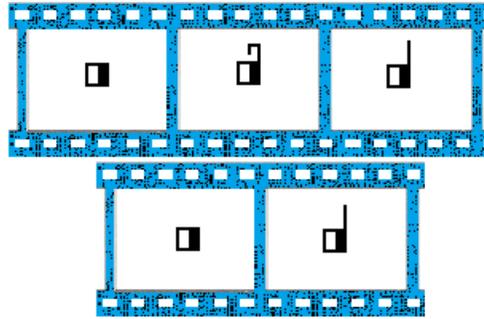
Some SignWritings are not explicit and rely on sign language knowledge to distinguish which interpretation is accurate. Normally, the dot is on the ending position, and the beginning position is not written. It is assumed that the sign starts with straight fingers to move into the squeeze.



Middle-Joint Opens

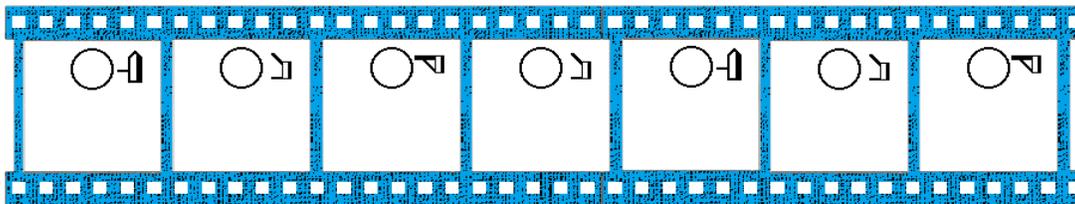
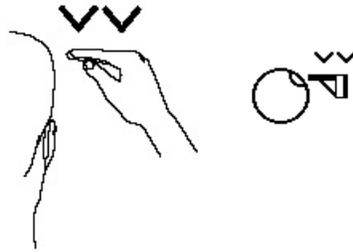


When the middle-joint of the finger opens (bends up or out), this opening finger movement is written with a hollow dot. The dot is placed near the finger joint that does the movement. Two dots mean two openings. The Middle-Joint Opens symbol is not displayed in SignAnimating. It is represented by hand shapes with closed and opened fingers. The number of finger positions depends on the movement. If the animation frame rate allows it, half opened finger may be displayed.



Knuckle-Joint Closes

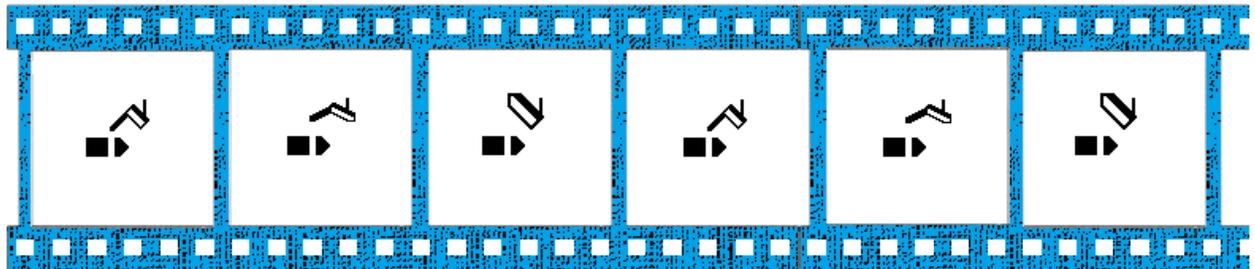

 When the knuckle-joint of the finger closes (bends down or in), this closing knuckle movement is written with a small arrow that points down. The arrow is placed near the knuckle joint that does the movement. Two arrows mean two closings. The Knuckle-Joint Closes symbol is not displayed in SignAnimating. It is represented by hand shapes with bent down and extended fingers.



Boy (ASL)

Knuckle-Joint Opens

 When the knuckle-joint of the finger opens (bends up or out), this opening knuckle movement is written with a small arrow that points up. The arrow is placed near the knuckle joint that does the movement. Two arrows mean two openings. The Knuckle-Joint Opens symbol is not displayed in SignAnimating. It is represented by hand shapes with bent down and extended fingers.

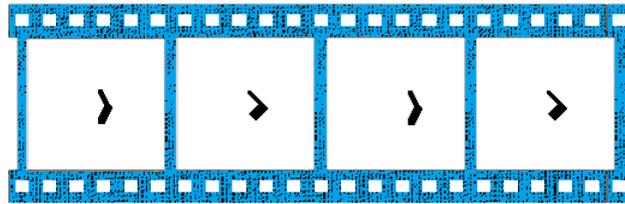


Send-send (ASL)

Knuckle-Joints Open Close

 The knuckle-joints Open Close is used when the fingers move together in the same direction as a unit. The knuckle-joints of the fingers open and close (bend up and down) together. This open-close knuckle movement is written with one row of small connected arrows pointing up and down. The Knuckle-Joint Open Close symbol is not displayed in SignAnimating. It is represented by hand shapes with bent down and extended fingers.

 The Knuckles Open & Close Together symbol is distinct from the repeated Knuckle Join Open symbol.

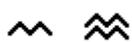


Goodbye (ASL)

Knuckle-Joints Alternate

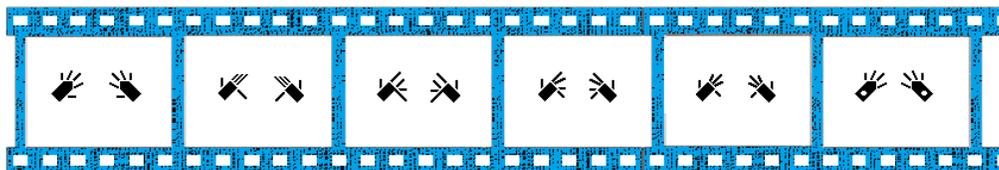


The fingers do not move together in a unit. Instead they move in opposite directions. One moves up, as the other moves down. This is called alternating. This alternating knuckle movement symbol is written with two rows of small arrows pointing up and down. The alternating knuckle movement symbol is not displayed in SignAnimating. It is represented by hand shapes with bent down and extended fingers.



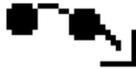
The Knuckles Open & Close Together symbol is distinct from the Knuckles Open & Close Alternating symbol.

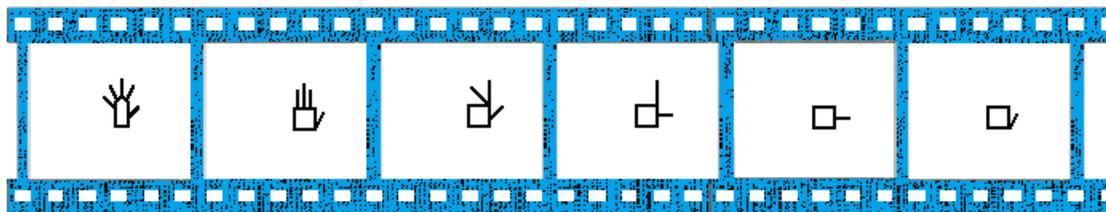
In the example, the top view of the back of the hand is written at a slant. It looks more like real life because the fingers are directed down.



Typing (ASL)

Sequential Finger Movement

 The movement starts at the stem of the arrow and moves toward the arrowheads. The sequential finger movement symbol is not displayed in SignAnimating. It is represented by hand shapes with bent down and extended fingers.

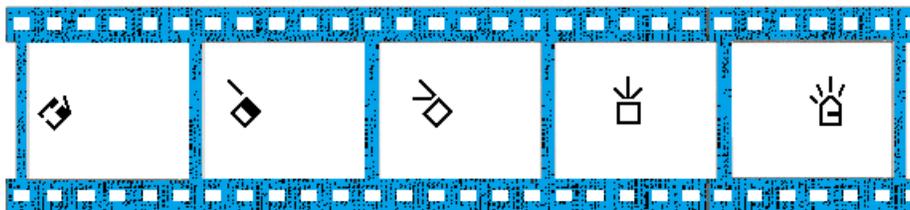
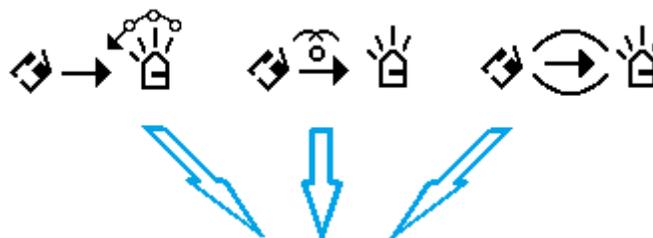


In the example below, several symbol sets represent the same sign. The hand moves toward the right as it points forward.

Finger-by-finger opening

Alternating finger opening without knowing which finger opens first

Moving gradually into the second position



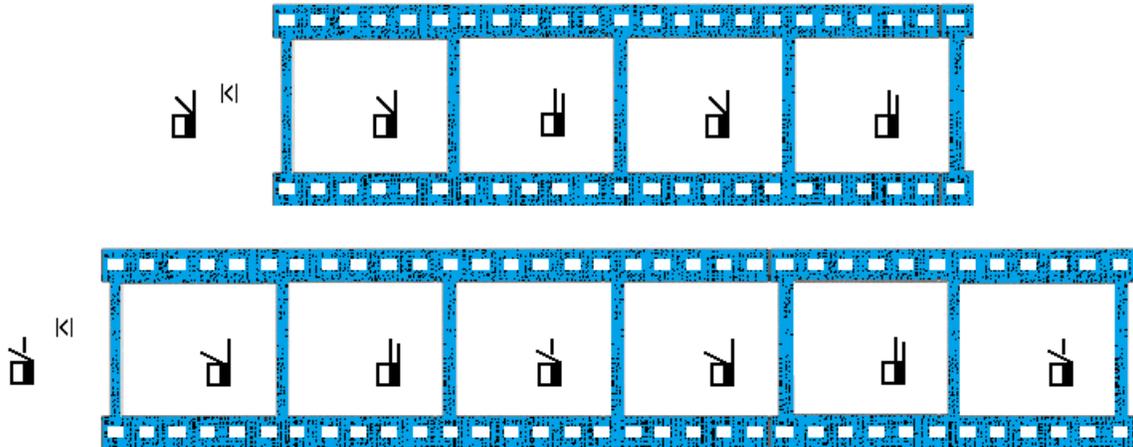
In the example below, the following drawings are not SignWriting, they should not be invented.



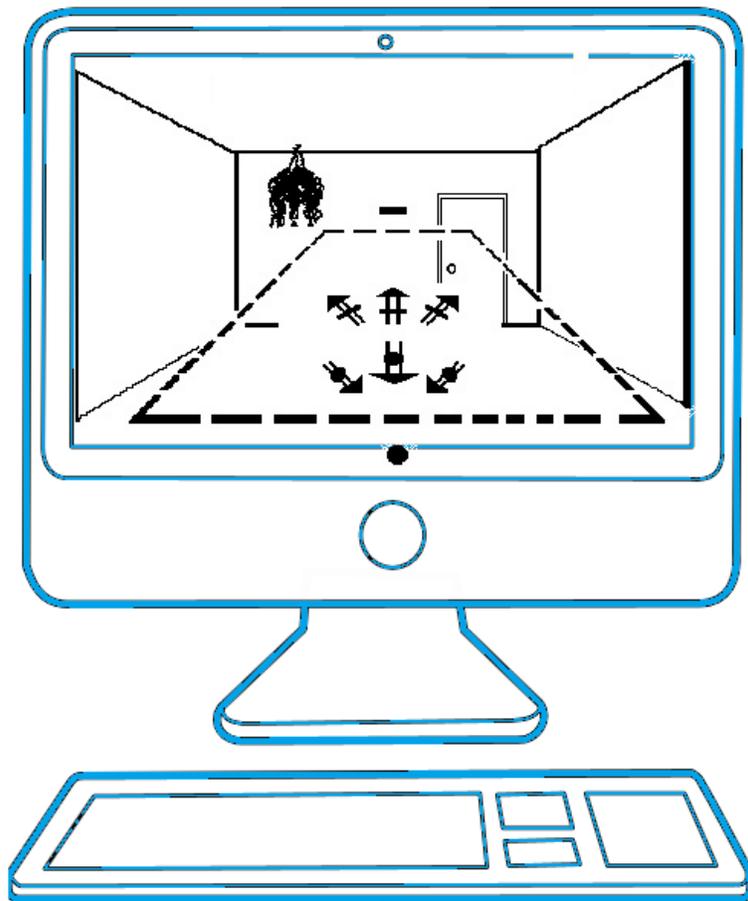
Squeeze Flick Alternating is represented as follow in SignWriting: 

Finger Scissor Movement

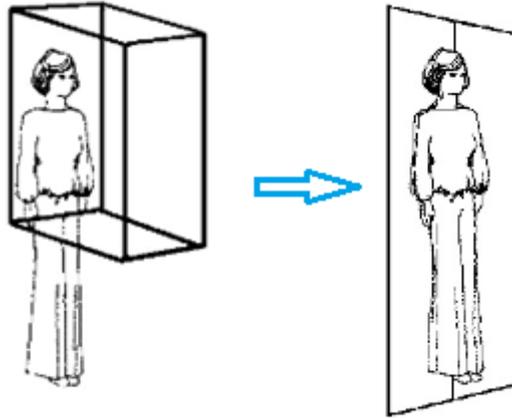
  Finger Scissor motion may be represented in two different ways, depending on the directions of the movement.



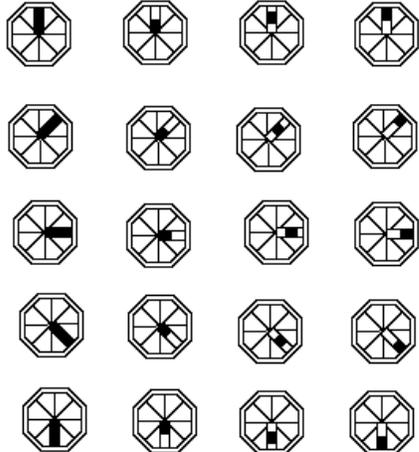
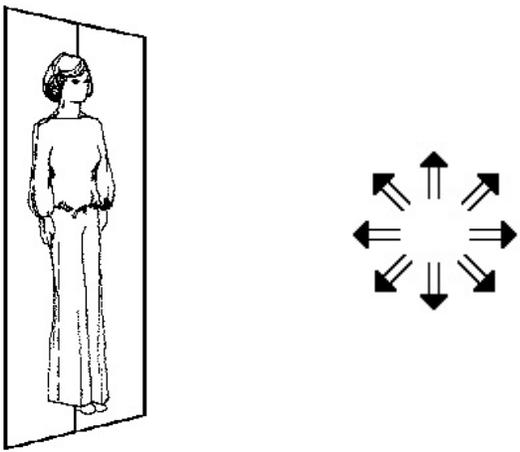
5. Straight Movements

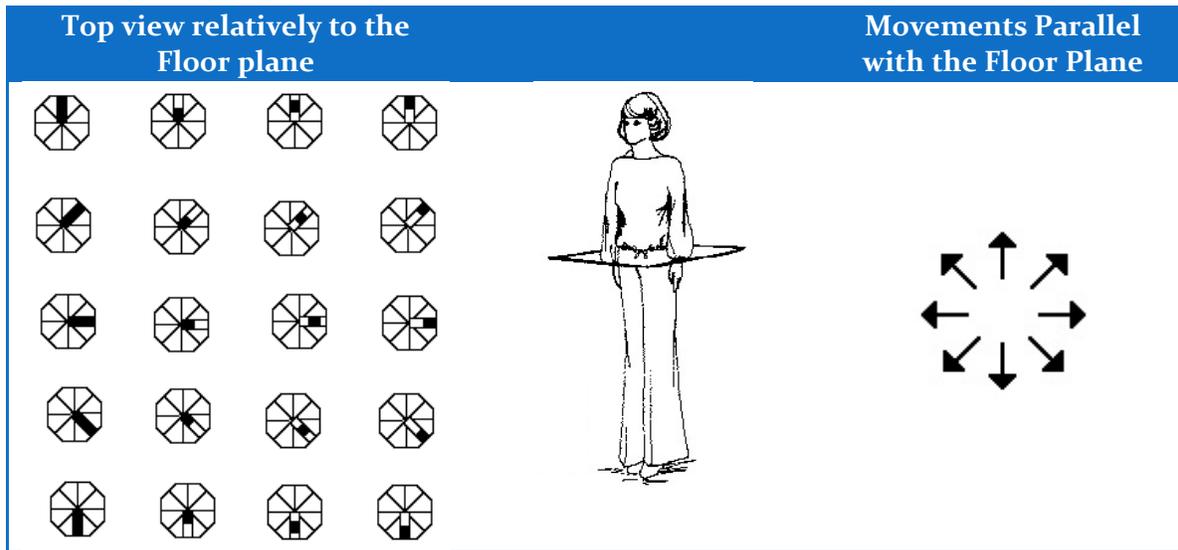


SignAnimating mostly represents a Front Wall perspective of the signing space.



SignSpelling is used in SignAnimating to conceptualize the hand positions and movement in the signing space. However, these symbols are not used in the animation.

Front View Relatively to the Wall Plane	Movements Parallel with the Wall Plane
	

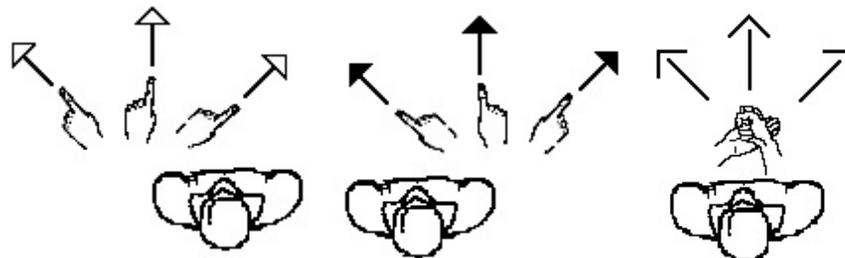


There is a correspondence between the SignSpelling symbols combinations.



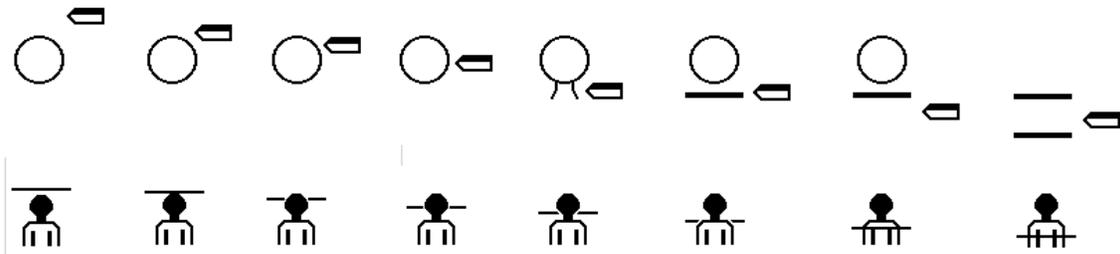
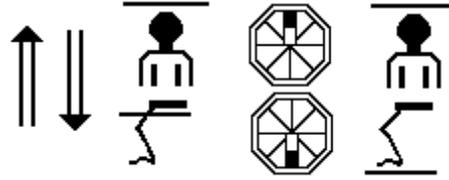
Left Hand Right Hand Movements

Movements with the left hand have a light arrowhead, the left hand movements have a dark arrowhead and both hands combined movements have a general arrowhead.

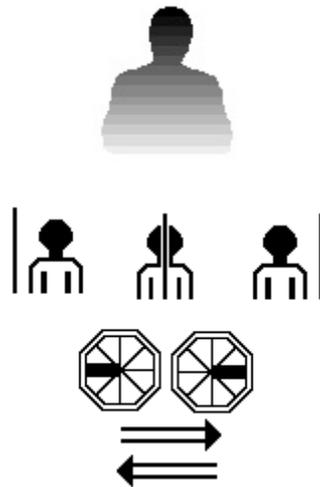


Up-Down Movement

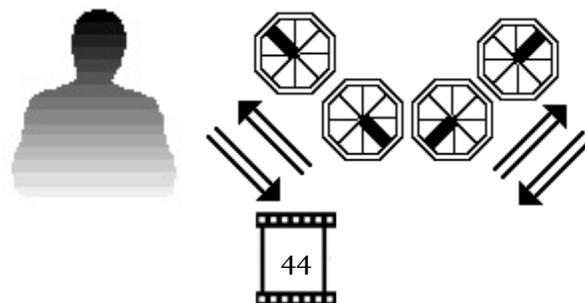
The movement may be between the head and the waist (even to the feet).



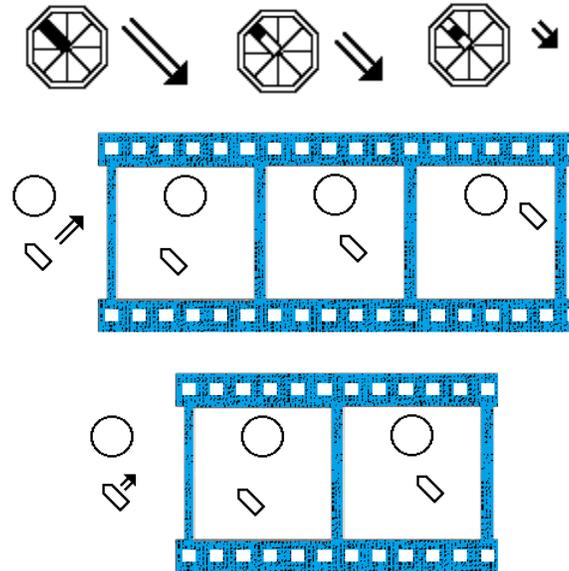
The movement may be between the left and the right side.



The movement may be in diagonal parallel with the front wall.

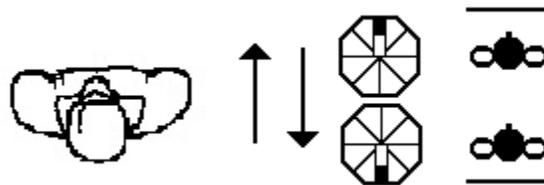


The movement range may be small or long.

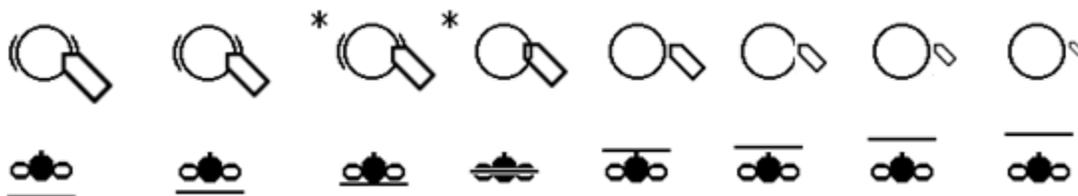


Forward-Back Movement

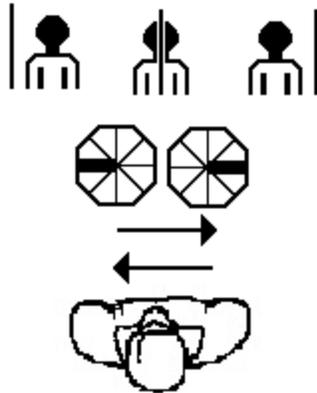
The movement may be forward or backward.



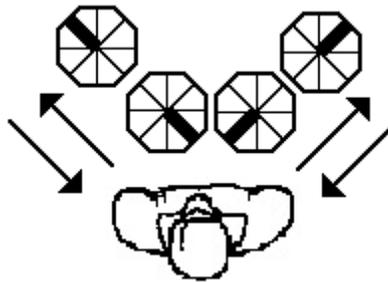
When the hand shape is behind the head, two curves are added to the head sides. If the hand touches the back, the side or the front of the head, a contact symbol is added. The hand shape is zoomed in to represent the back of the head and it is zoomed out progressively as it is further in front.



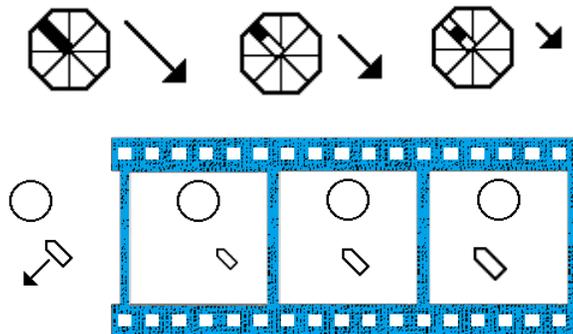
The movement may be between the left and the right side.



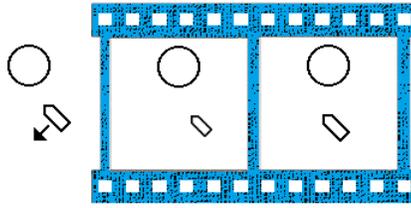
The movement may be in diagonal parallel with the floor.



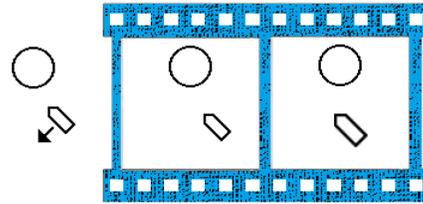
The movement range may be small or long. The arrow length indicates the movement amplitude in SignWriting. In SignAnimating, the zoom of the hand shapes indicate the proximity to the body. It may start far from the body and stop midway toward the chest. It may start midway and come close to the chest. The symbol does not imply a vertical movement but moves from one side toward the other.



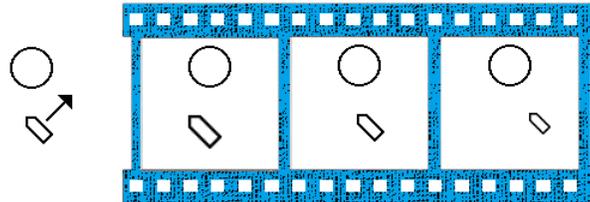
From far to close.



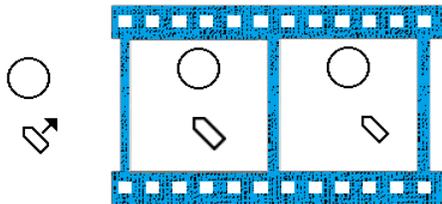
From far to mid-way.



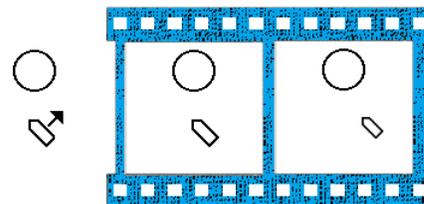
From mid-way to close.



From close to far forward.



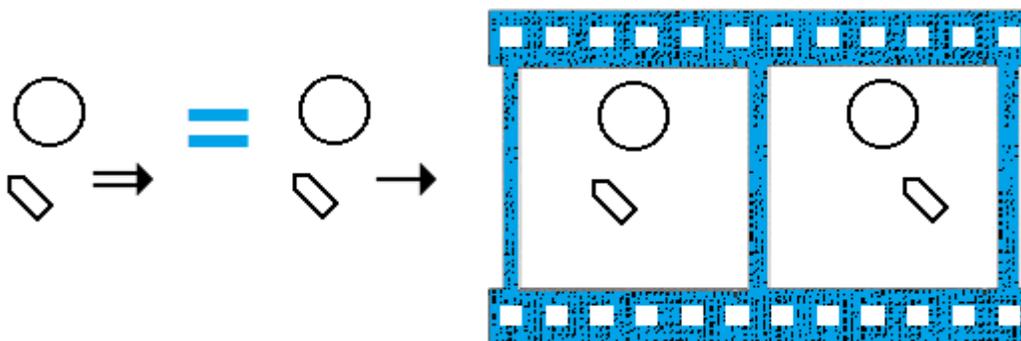
From close to mid-way forward.



From mid-way to far forward.

Movement to the Side

Movement to the side can be written relatively to the wall plane or the floor.



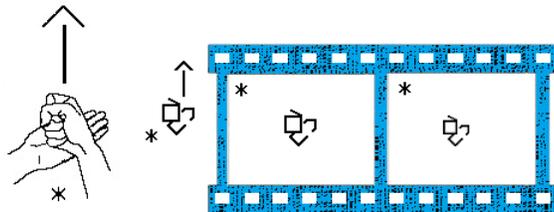
General Arrowhead

↑ The General arrowhead is used when the left and the right hand shapes movement overlap each other. The General arrowhead symbol is not displayed in SignAnimating. It is represented by hand shapes moving up, down, left, right or with a zoom out or zoom in indicating a movement forward or backward.

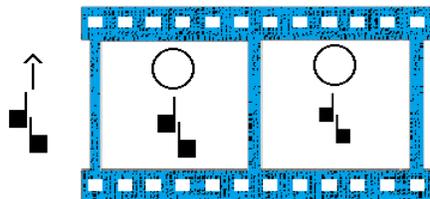
$$\uparrow + \uparrow = \uparrow$$

$$\uparrow\uparrow + \uparrow\uparrow = \uparrow\uparrow$$

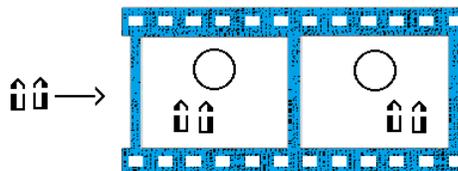
In the example, the movement forward of both hands is represented by a zoom out of the hand shapes. The contact symbol remains displayed because the contact between the hands is kept during the movement.



I help you (ASL)



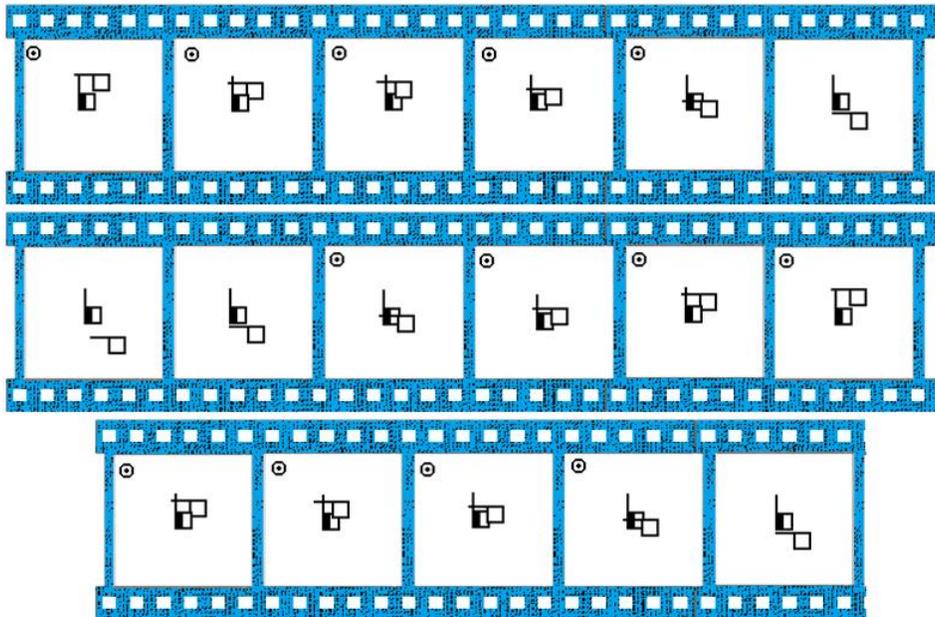
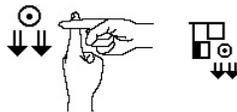
Follow (ASL)



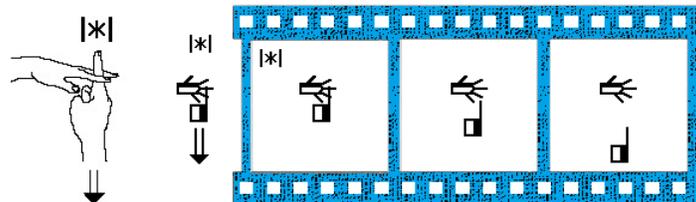
Plan (ASL)

Straight Movement Up or Down

 A double-stemmed arrow means that the movement is straight up or down, parallel with the front wall. The movement is flat with the front of the body. The Straight Movement Up or Down symbols are not displayed in SignAnimating. They are represented by hand shapes moving up or down.



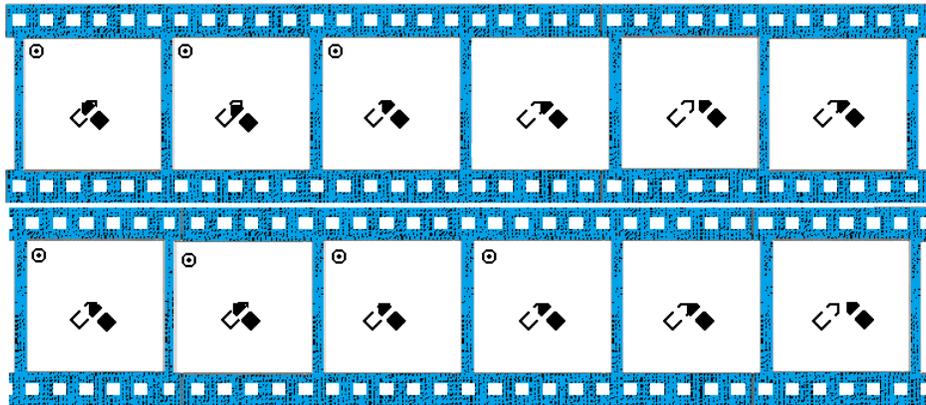
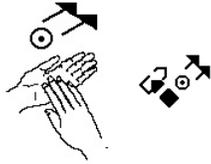
Monthly (ASL)



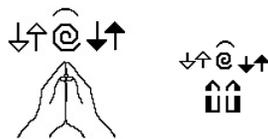
Disappear (ASL)

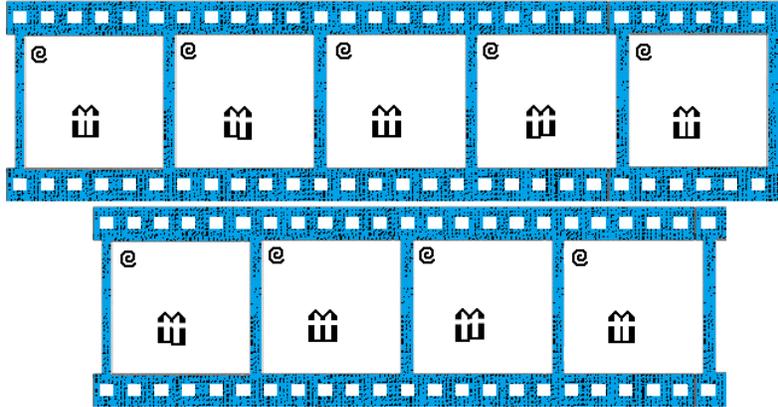
Straight Movement Forward or Back

 A single-stemmed arrow means that the movement is forward or backward, parallel with the floor. The Straight Movement Forward or Back symbols are not displayed in SignAnimating. They are represented by a zoom out or zoom in of the hand shapes indicating a movement forward or backward.



Excuse me (ASL)





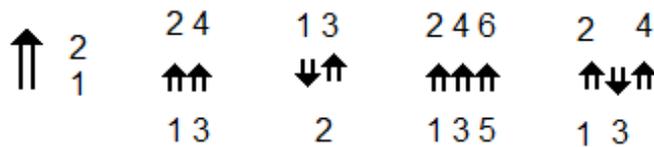
Eager (ASL)

Up-Down Straight Movement

Up-Down movement is parallel with the Front Wall. It is written with double-stemmed arrows. The Up or Down Movement symbols are not displayed in SignAnimating. They are represented by hand shapes moving up, down, left or right.

Symbols may be a combination of displacements. The hand shape will take several positions in SignAnimating.

The following symbols do not contain a lateral displacement. Numbers indicate in which order they are displayed in the animation.



Signs are not read from left to right but from the center of the sign to its sides.

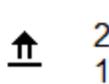


The following symbols differ in the order of the hand shape positions.



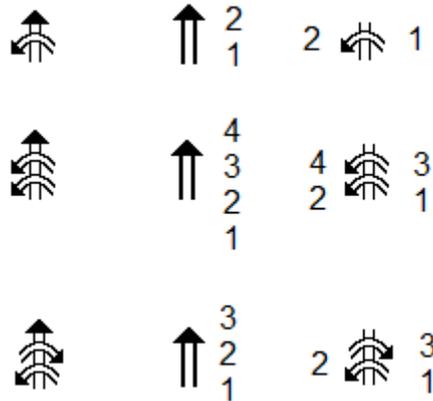
The following symbols contain up-down and lateral displacement.



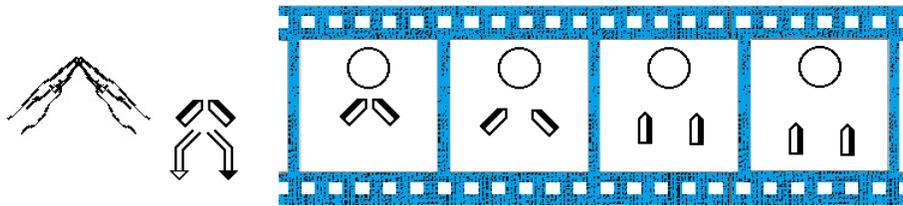
 The Wall-Plane-Flex movement of the wrist may need to be displayed in SignAnimating to distinguish it from a harm movement. It is also possible to add a line representing a static harm on which a hand shape moves.

Wall-Plane-Twist

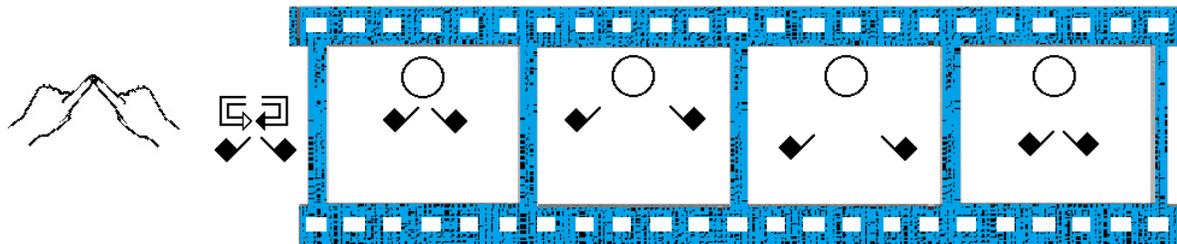
Wall-Plane-Twist combines a movement parallel to the wall plane and an axial rotation of the forearm. See the chapter on axial movement for details.



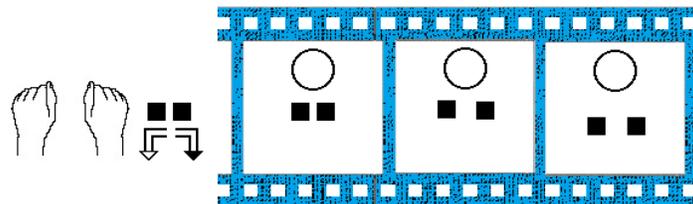
Up-Down Straight Arrows



House (ASL)



Square (ASL)



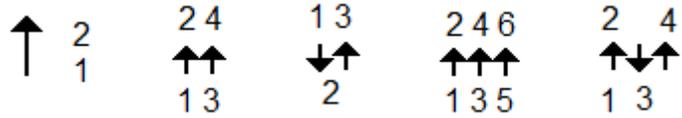
System (ASL)

Forward-Back Straight Movement

Forward-Back movement is parallel with the floor. It is written with single-stemmed arrows. The Forward or Back Movement symbols are not displayed in SignAnimating. They are represented by hand shapes zoomed-out (forward), zoomed-in (backward), left or right.

Symbols may be a combination of displacements. The hand shape will take several positions in SignAnimating.

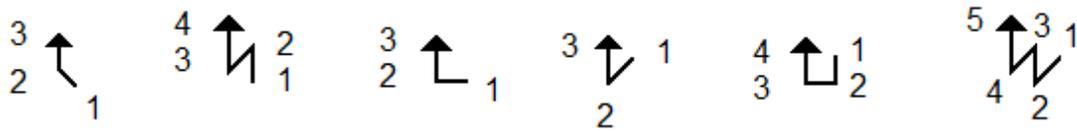
The following symbols do not contain a lateral displacement. Numbers indicate in which order they are displayed in the animation. Signs are not read from left to right but from the center of the sign to its sides.



The following symbols differ in the order of the hand shape positions.



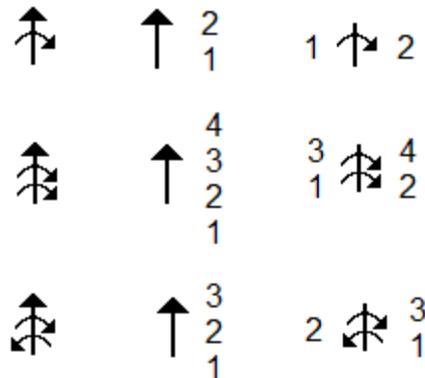
The following symbols contain up-down and lateral displacement.

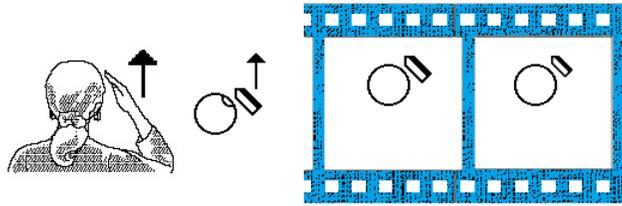


 ² The Wall-Plane-Flex movement of the wrist may need to be displayed in SignAnimating to distinguish it from a harm movement. It is also possible to add a line representing a static harm on which a hand shape moves.

Floor-Plane-twist

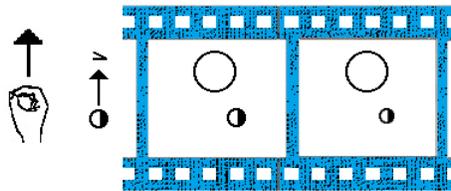
Floor-Plane-Twist combines a movement parallel to the floor plane and an axial rotation of the forearm. See the chapter on axial movement for details.



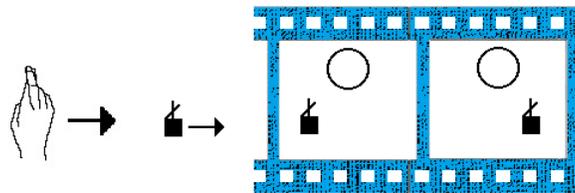


Hello (ASL)

The following example with a Fast symbol is animated with a minimum of frames.

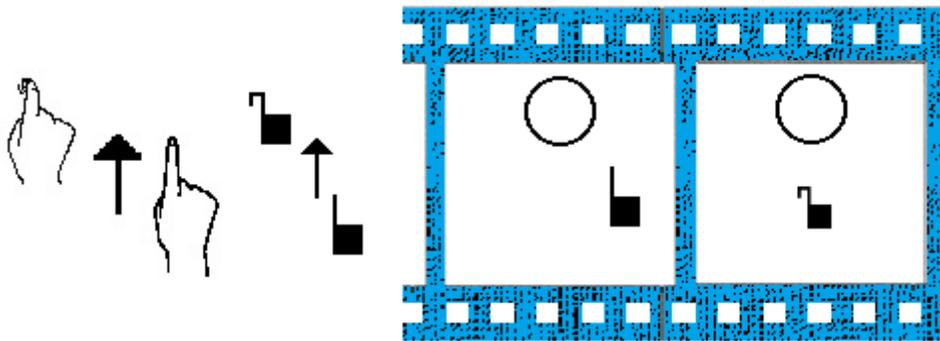


Nothing (ASL)



Right direction (ASL)

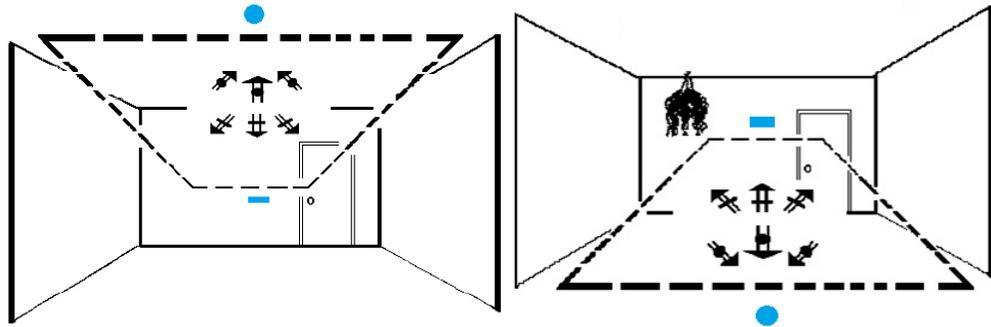
The following symbols do not contain a vertical displacement.



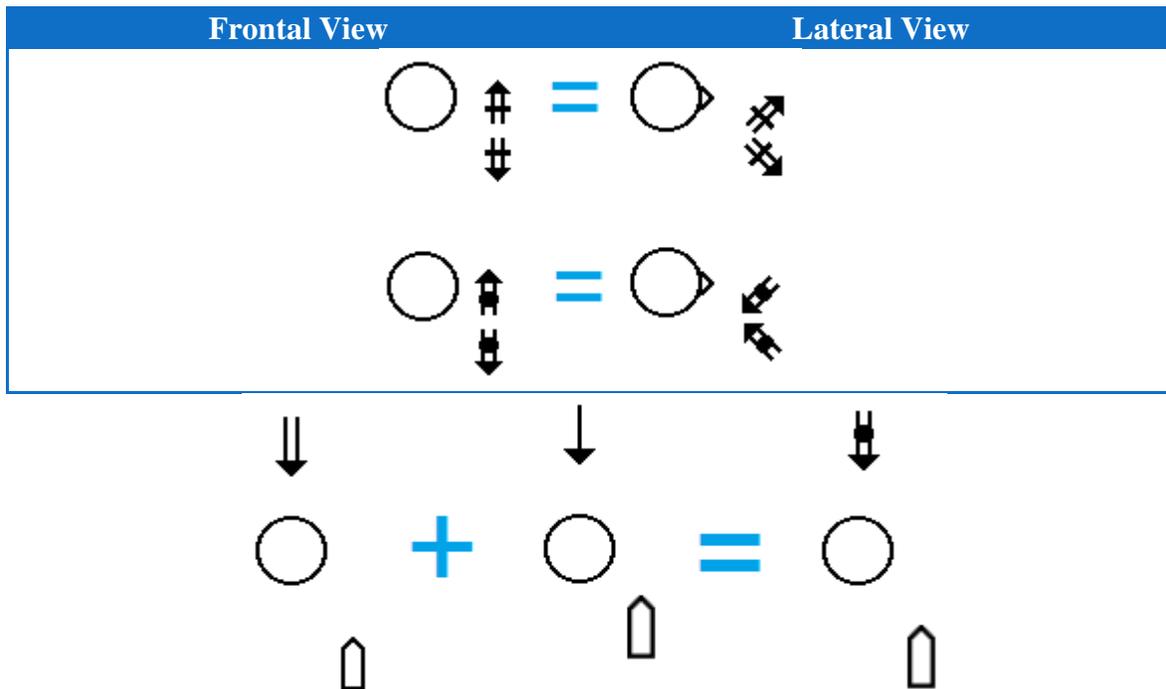
Ask a question (ASL)

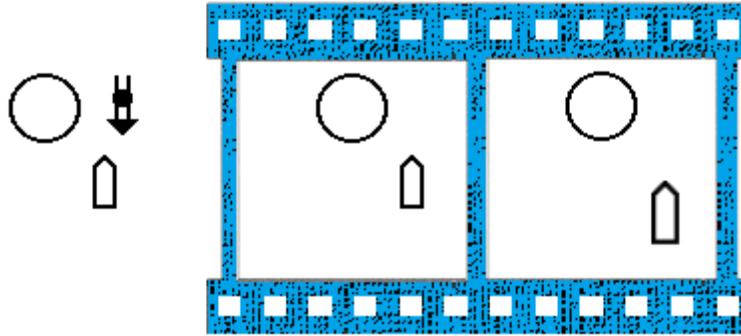
Forward or Back Diagonals

A horizontal bar means away from the chest. A dot means towards the chest.

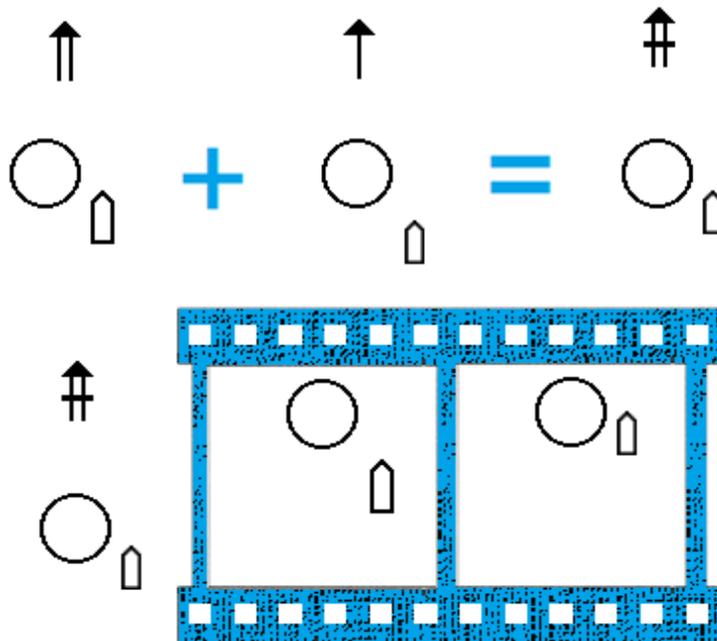


The Back Diagonal Movement is written with double-stemmed arrows and a dot. The dot means toward the chest. The dot does not imply necessarily a contact with the body. The Back Diagonal Movement symbol is not displayed in SignAnimating. It is represented by hand shapes moving down and zoomed in.

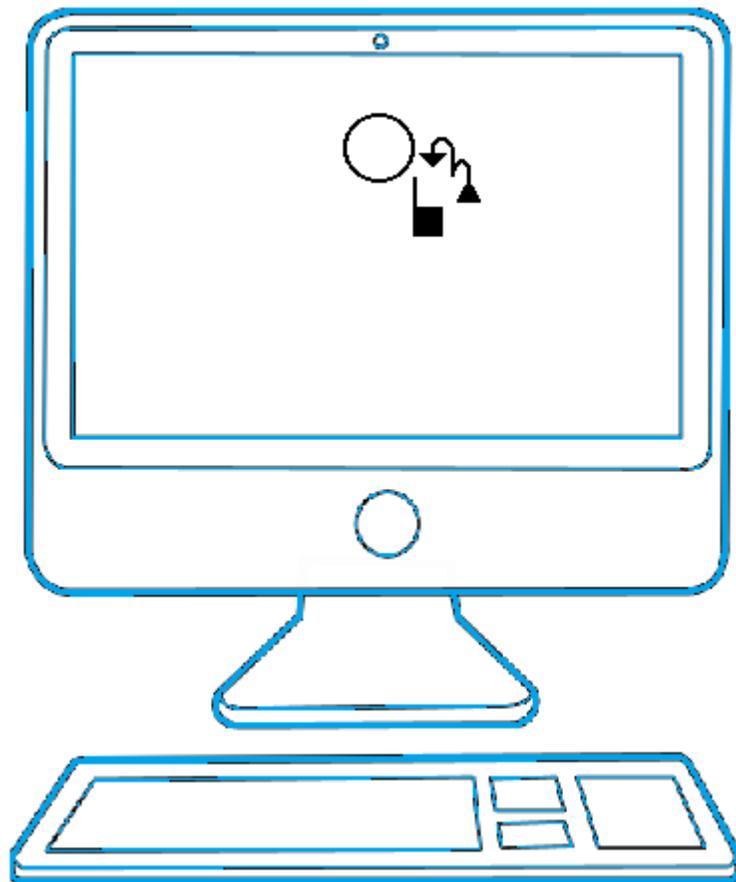




The Forward Diagonal Movement is written with double-stemmed arrows and a line. The horizontal bar means away from the chest. The Forward Diagonal Movement symbol is not displayed in SignAnimating. It is represented by hand shapes moving up and zoomed out.

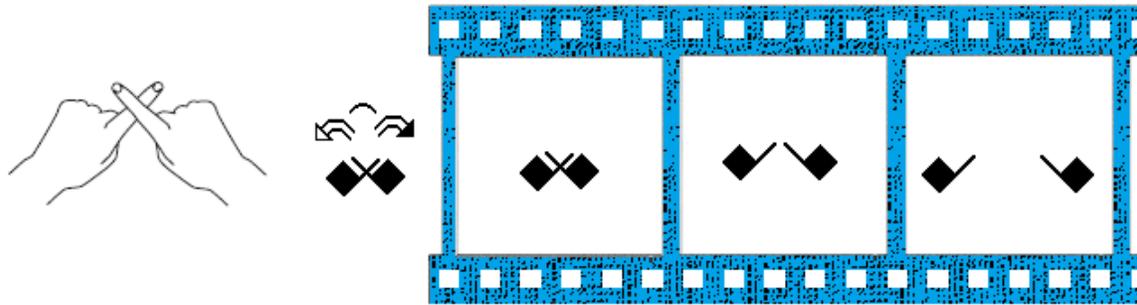
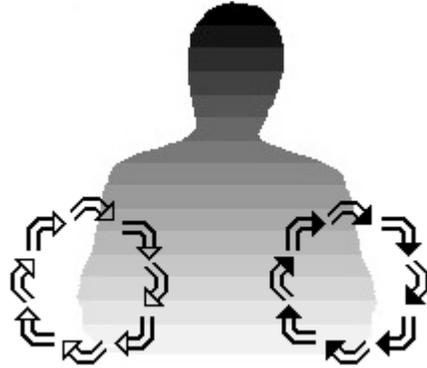


6. Curved Movements



Up-Down Curved Movement

 Up-Down movement is parallel with the front wall. It is written with double-stemmed arrows. The Up-Down movement symbols are not displayed in SignAnimating. They are represented by hand shapes moving up, down and laterally.



But (ASL)

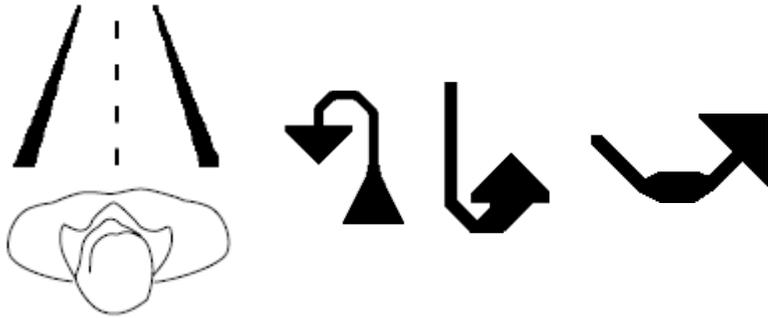
Forward or Back Curved Movement

Forward-Back movement are written with single-stemmed arrows. They may contain a loop or several curves. The Forward-Back Movement symbols are not displayed in SignAnimating. They are represented by hand shapes moving up, down and laterally. They are zoomed out to represent a movement forward. They are zoomed in to represent a movement backward.

Close and Far Perspective

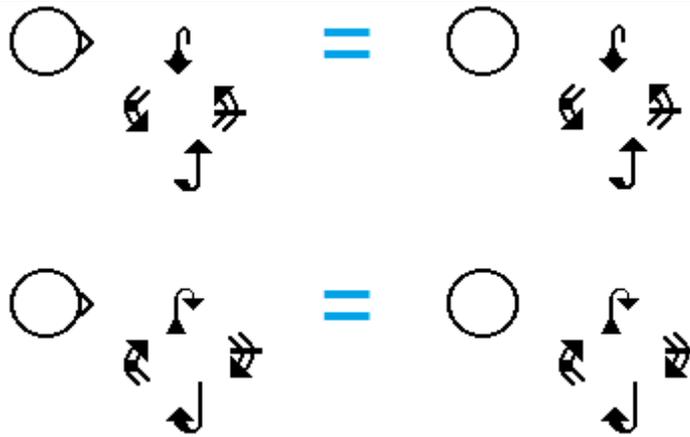
The thinner section of the arrow means far from the body.

The thick, dark section means close to the body.



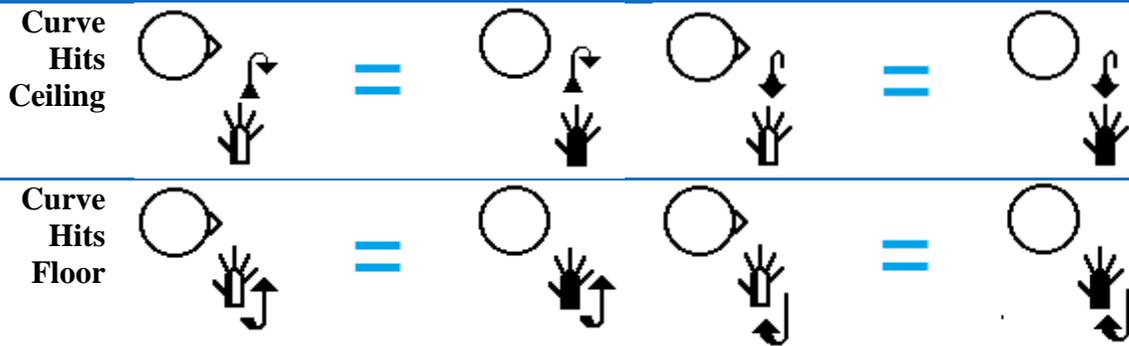
Side View of Curved Movements

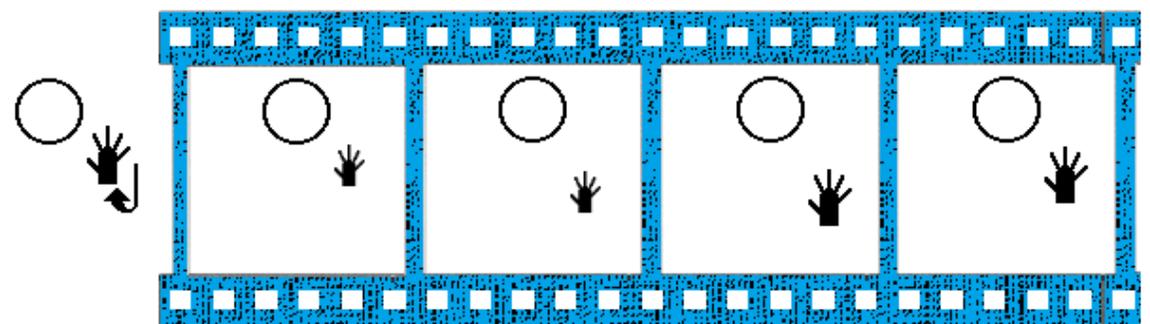
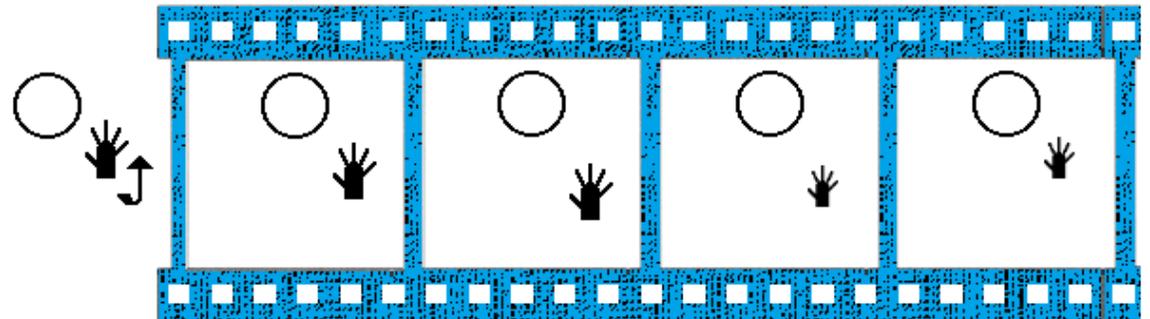
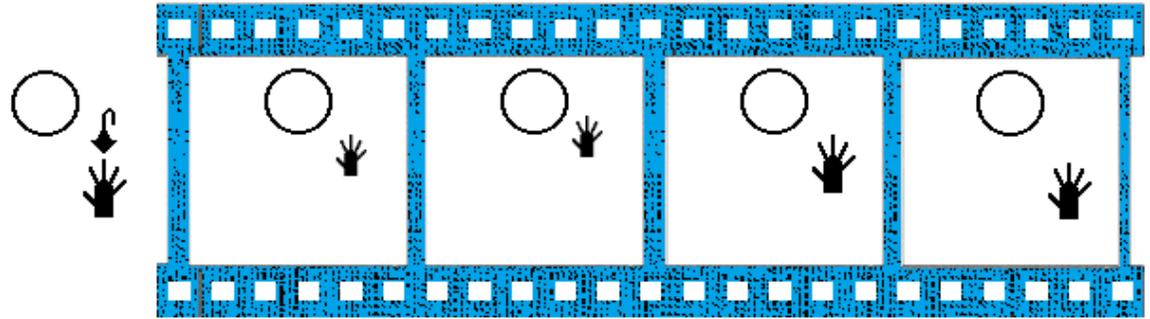
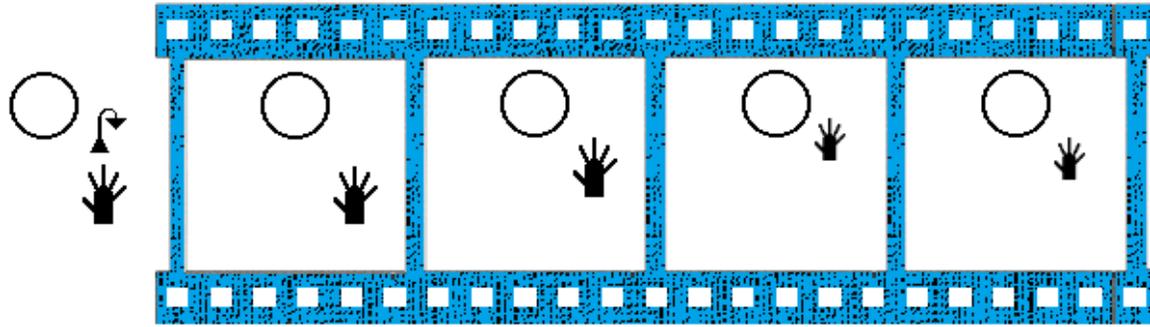
Front View of Curved Movements



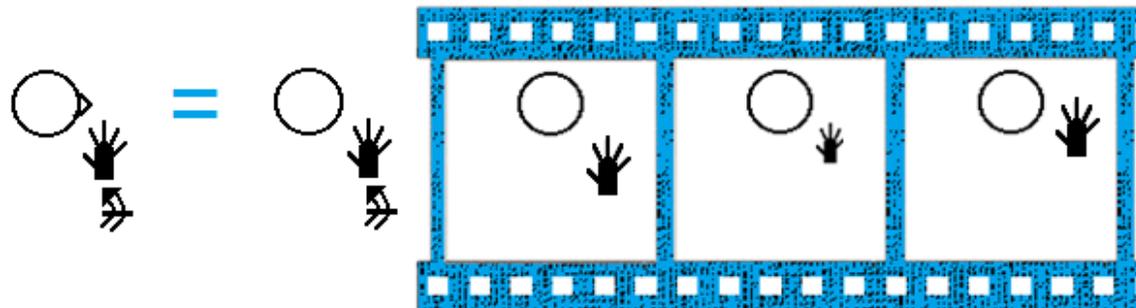
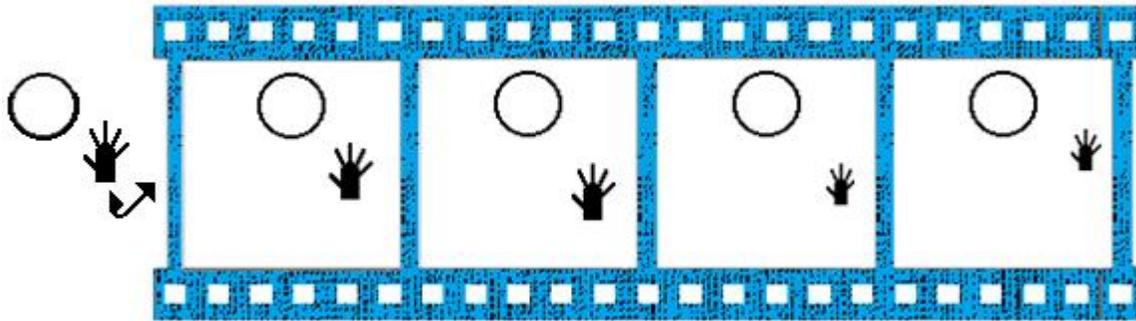
Forward

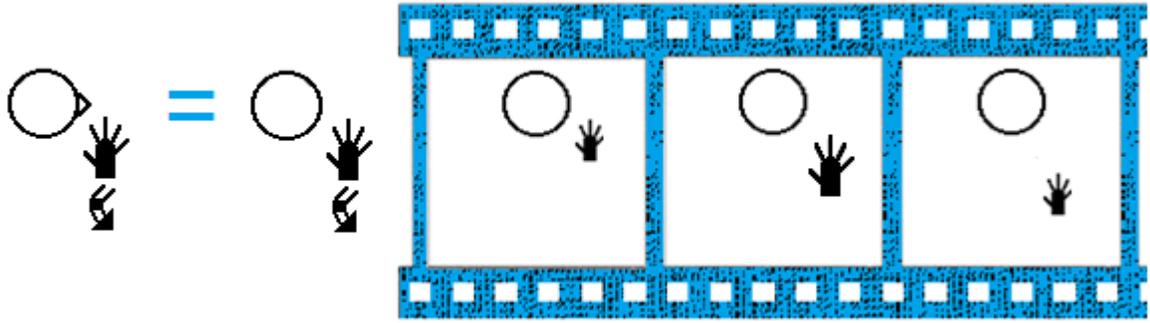
Backward

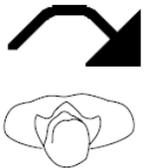
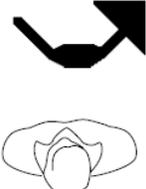
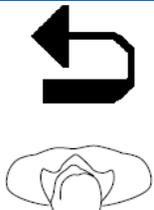
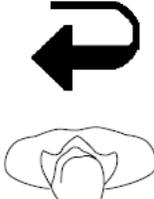


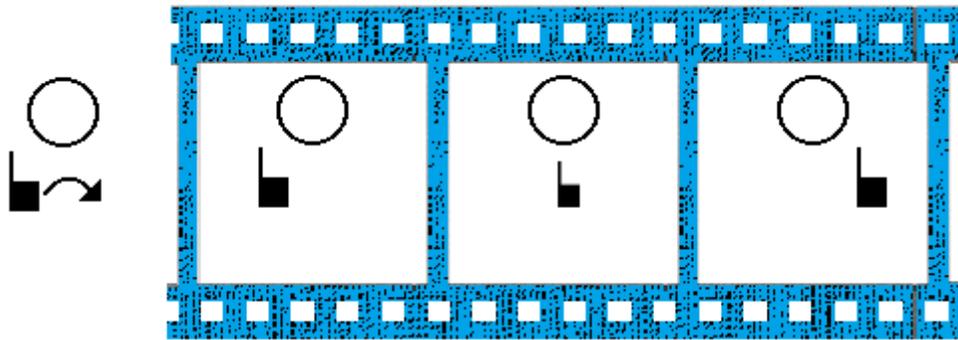


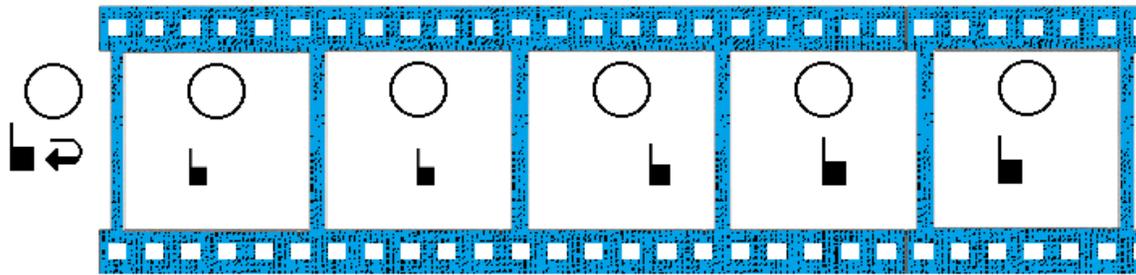
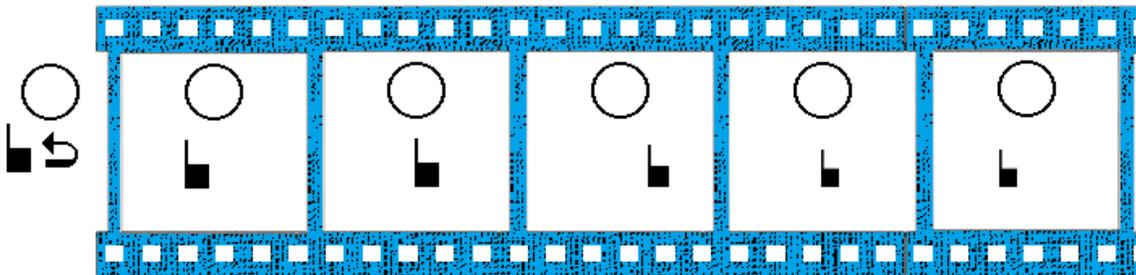
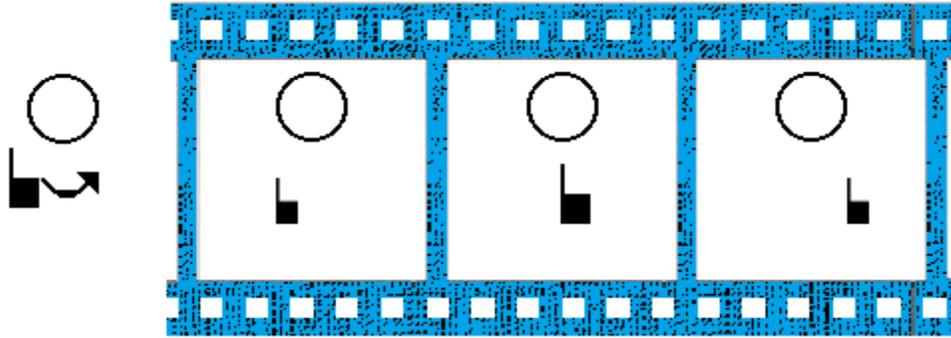
	Forward and Side Diagonals	Backward and Side Diagonals
Curve Hits Ceiling		
Curve Hits Floor		



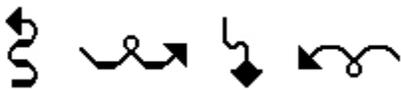


Forward and Side	Backward and Side
 <p>A curved arrow pointing down and to the right, and a line drawing of a hand holding a circle with the hand positioned on the right side.</p>	 <p>A curved arrow pointing down and to the left, and a line drawing of a hand holding a circle with the hand positioned on the right side.</p>
 <p>A curved arrow pointing down and to the left, and a line drawing of a hand holding a circle with the hand positioned on the left side.</p>	 <p>A curved arrow pointing down and to the right, and a line drawing of a hand holding a circle with the hand positioned on the left side.</p>



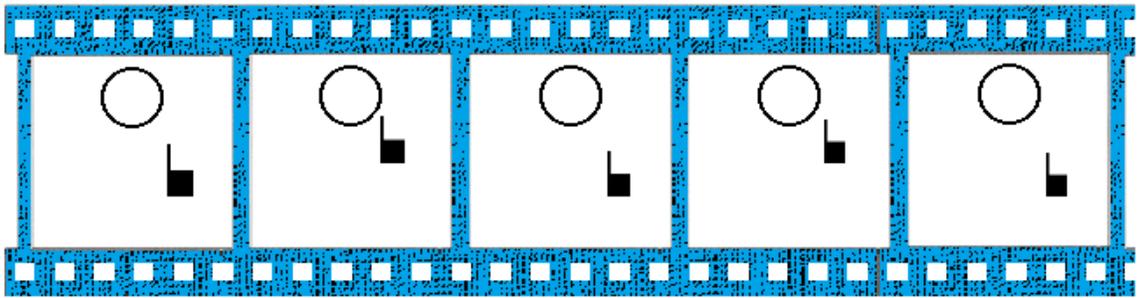
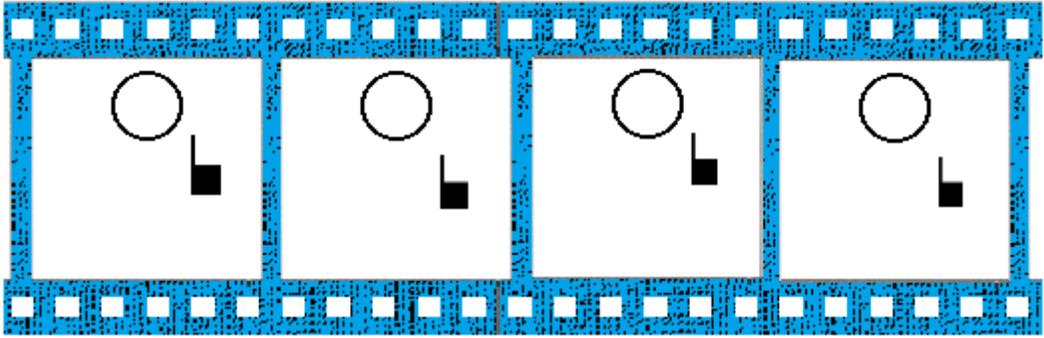


Complex Curves

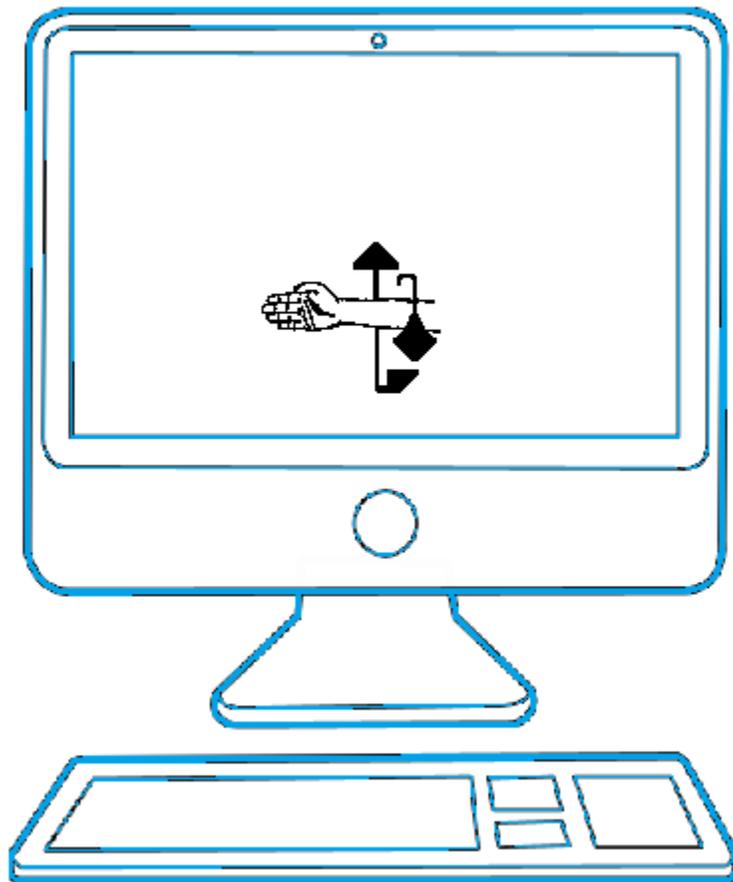


Several complex curved movements are possible. A few examples follow.



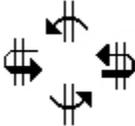
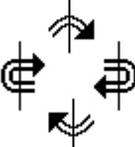
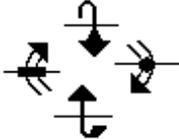


7. Axial Movements

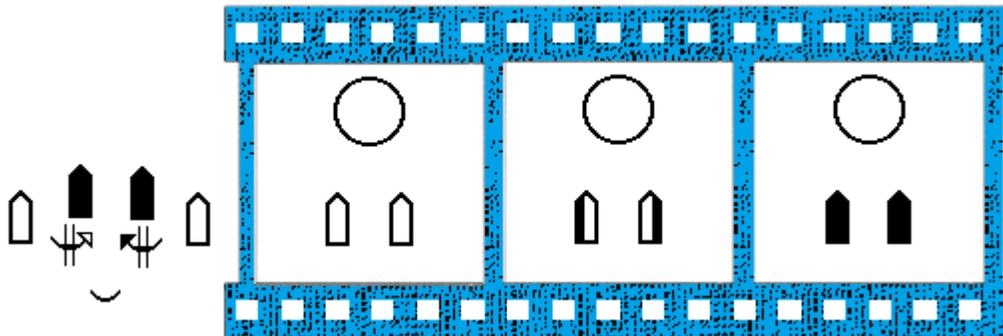
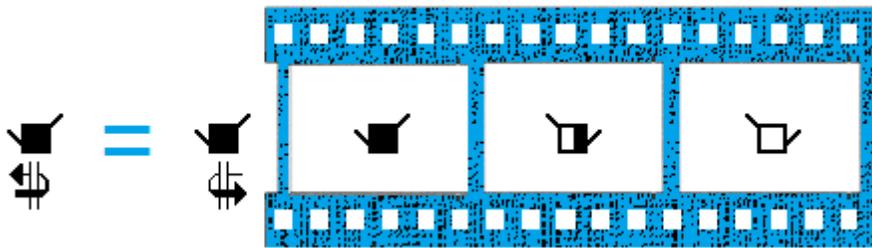
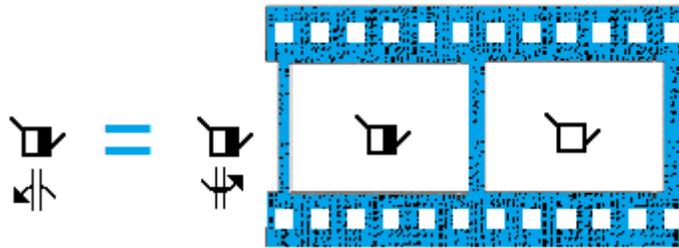
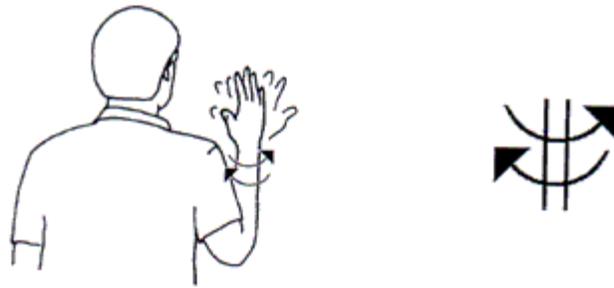


Rotation Movement of the Forearm

SignWriting includes symbols which show rotation movements made with the forearm. The forearm does not travel. It stays in place and rotates. Rotation symbols place a curved arrow on an “axis”. The “axis-line” represents the forearm. The rotation revolves around this axis. The axial rotation may be up to 180°. Those symbols are not used in SignAnimating, but a forearm may be included in the animation.

Forearm points upward	Forearm points forward	Forearm points sideways
		
<p>A double-lined axis-line represents an axis that is parallel with the wall. The forearm is up and the rotation revolves around this up-down axis.</p>	<p>A single-lined axis-line represents an axis that is parallel with the floor. The forearm is pointing forward and the rotation revolves around this up-down axis.</p>	<p>When the forearm is parallel with the floor, but pointing side, the “axis-line” is a single horizontal line pointing side.</p>
		
<p>Illustrations from Parkhurst, Dianne and Parkhurst, Stephen (2010) A Cross-Linguistic Guide to SignWriting®. A phonetic approach.</p>	<p>Illustrations by Jayne Gunderson, from the text "SignWriting For Everyday Use", 1982.</p>	

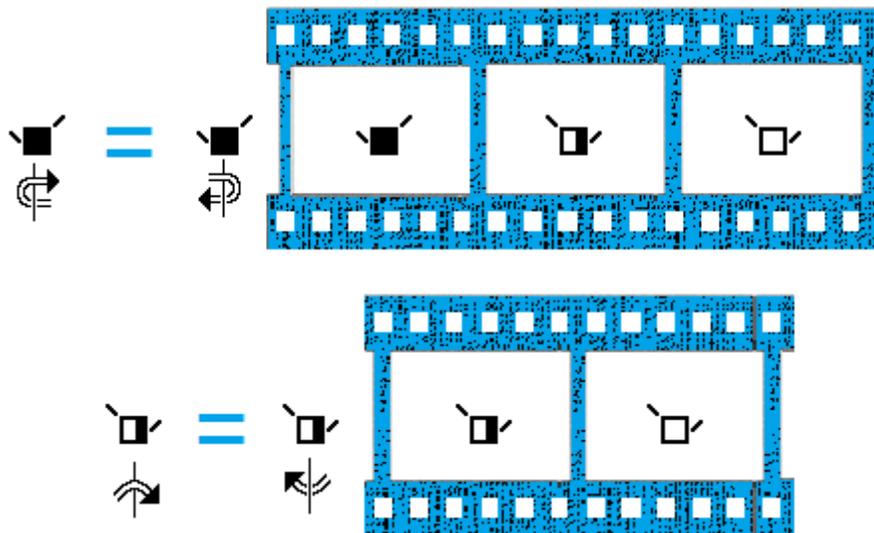
Forearm Points Upward

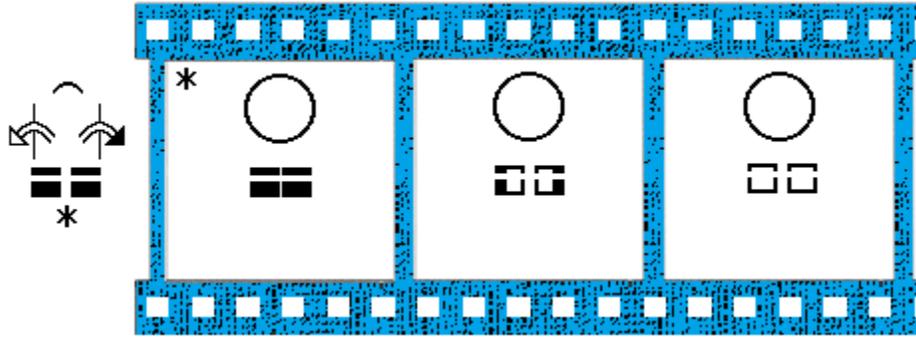


Close (ASL)

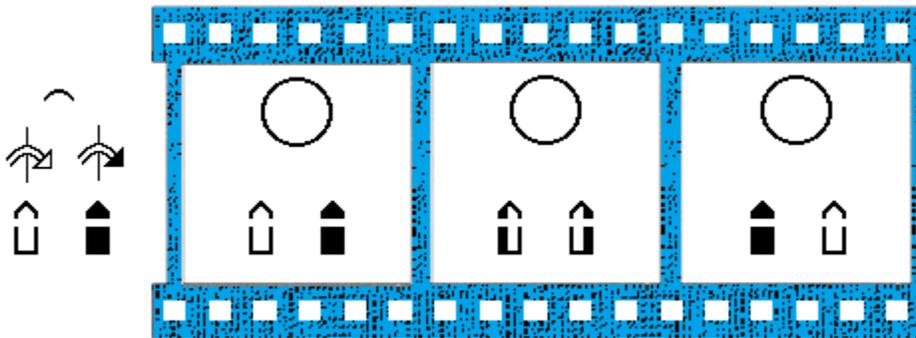
Forearm Points Forward

Forearm Projects Forward, Parallel With Floor (line for forearm is seen from overhead)		
		
	Forearm rotates up and to the side	Forearm rotates down and to the side
The two movements above are the same. The difference is the feeling of the baby finger or the feeling of the thumb leading the rotation.		
		
	Forearm rotates side and down	Forearm rotates side and up
Illustrations by Jayne Gunderson, from the text "SignWriting For Everyday Use", 1982.		



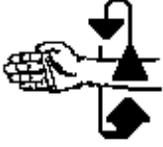
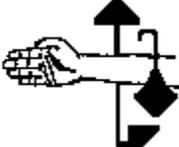


Break (ASL)

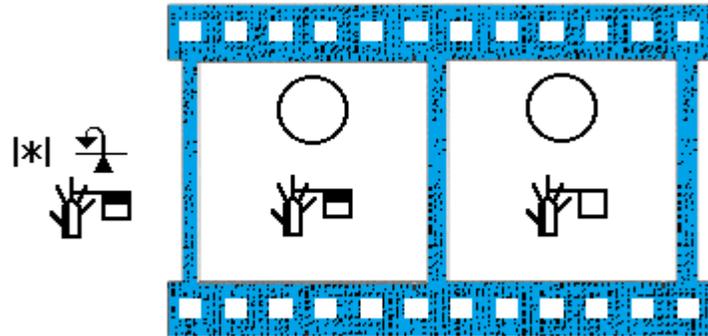
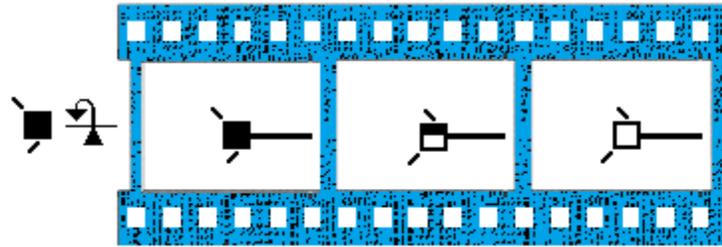


Dead (ASL)

Forearm Points Sideways

Forearm Side to Side, Parallel With Floor		
		
	Forearm rotates up and forward	Forearm rotates down and back
		
	Forearm rotates up and back	Forearm rotates down and forward

Illustrations by Jayne Gunderson, from the text "SignWriting For Everyday Use", 1982.



Begin (ASL)

Alternating and Double Rotations

Rotations may alternate in opposite directions or repeat.

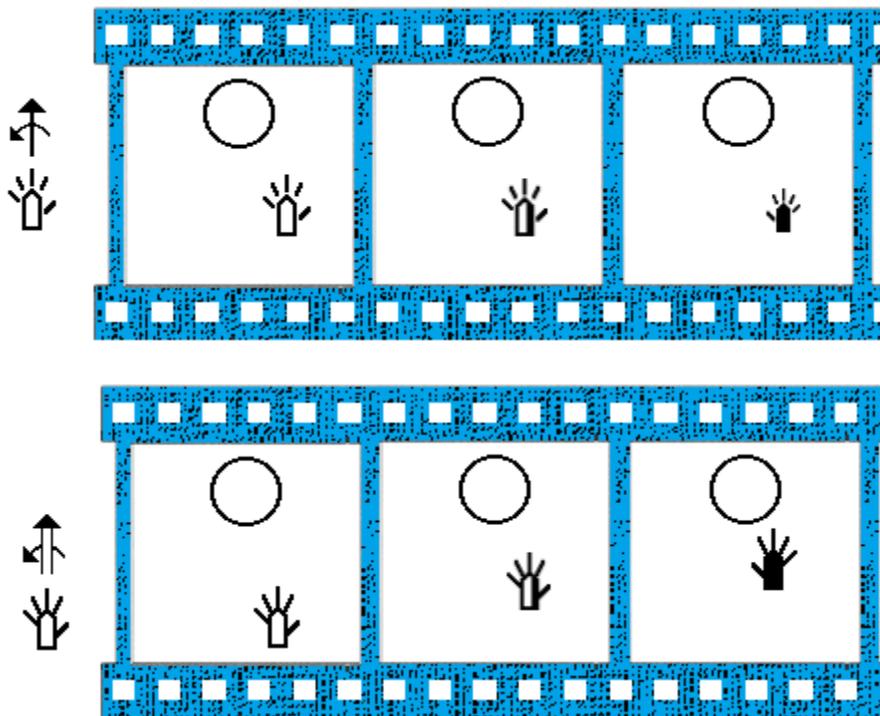
	Forearm Projects Upward, Parallel With Wall	Forearm Projects Forward, Parallel With Floor	Forearm Side to Side, Parallel With Floor
Alternating Rotations			
Double Rotations			

Traveling Rotation

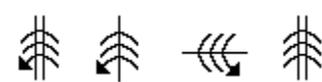
 A few movement symbols combine “traveling” movement with an added rotation. The forearm rotates as the arm moves in a specific direction. The rotation symbol is placed on the stem line of the arrow. The rotation symbol may alternate or repeat.



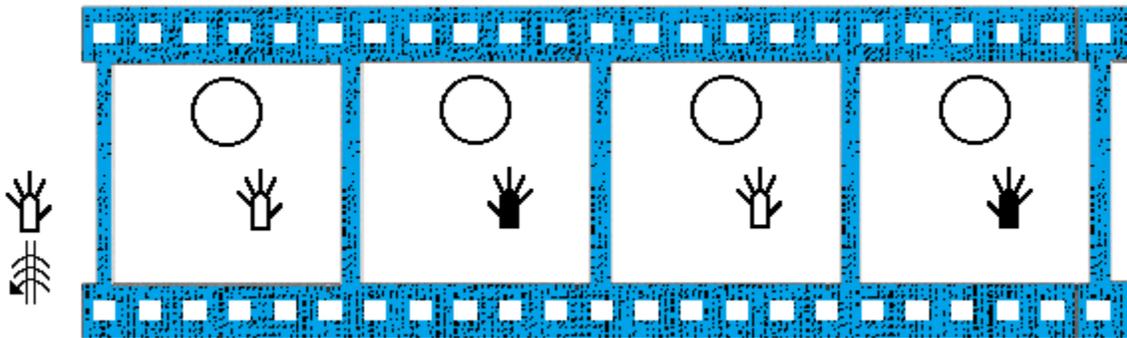
 The Travel harm spiral performs complete rotations while moving.



Shaking Rotation

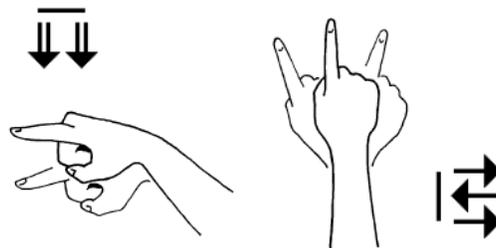
 Shaking rotation does not define how many rotations are made. Instead, it is a fast, shaking motion. In SignWriting, it can be written with or without an arrowhead. The dark arrowhead indicates the right arm is shaking. The light arrowhead indicates the left arm is shaking. The general arrowhead indicates that both hands are shaking. In

SignAnimating, the Shaking symbol is not used. Only two alternating hand shape orientations are displayed at a high frame rate.

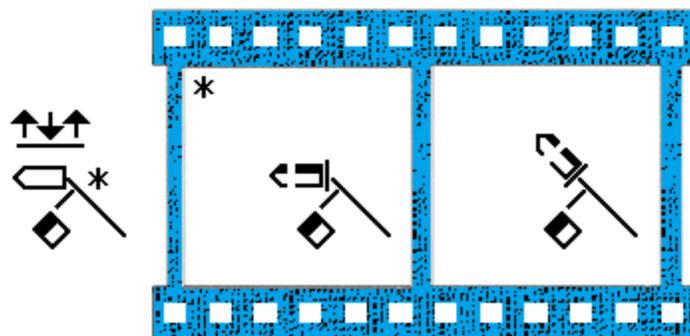


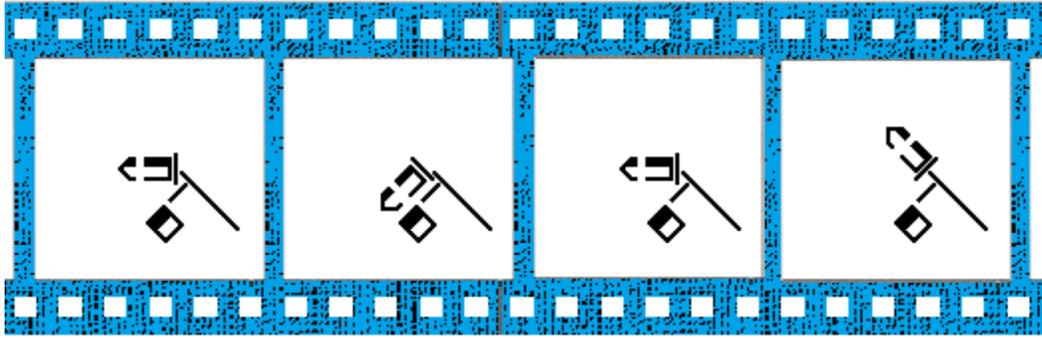
Wrist-Flexing Movement

The wrist remains stable while the hand moves in different directions. This flexing motion is written with a horizontal line cutting the wrist. The horizontal line represents the axis of motion. Small arrows point in the direction of the flexing motion. The arrows represent the direction of the hand as it moves. In SignAnimating, the arrow is not displayed but the wrist line is displayed.



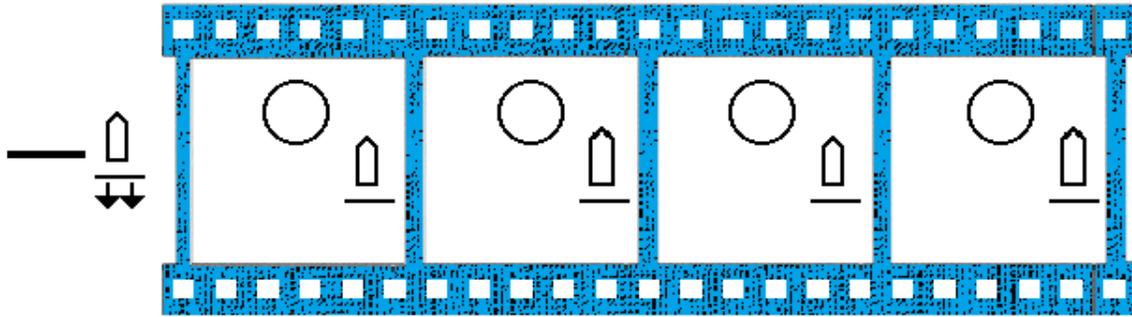
Illustrations from Parkhurst, Dianne and Parkhurst, Stephen (2010) A Cross-Linguistic Guide to SignWriting®. A phonetic approach.



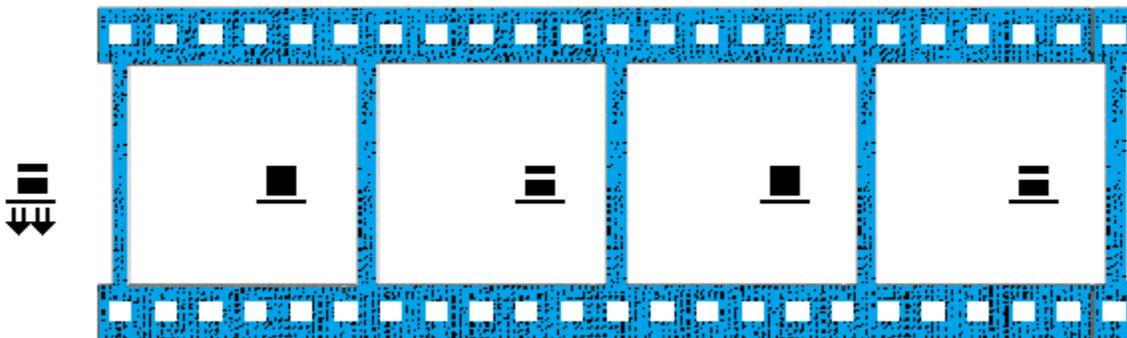


Flag (ASL)

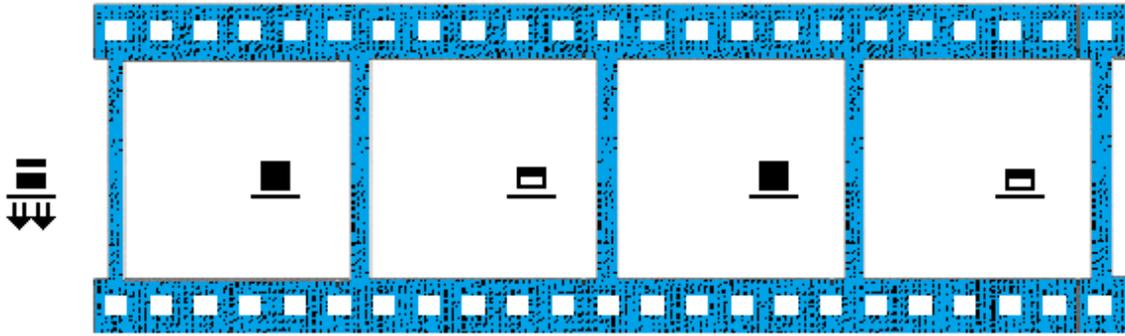
In the SignAnimating, if the head is displayed, the shoulder line is not required when the head provides the same information.



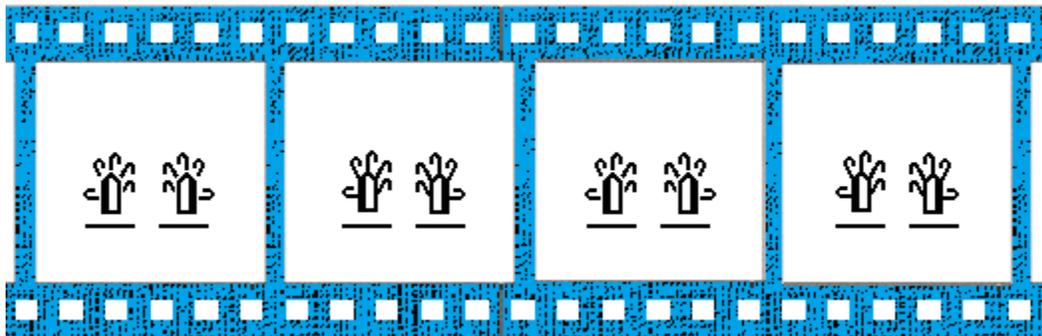
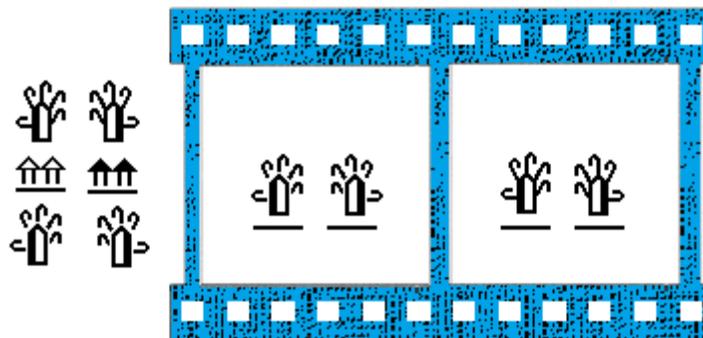
Before (ASL)



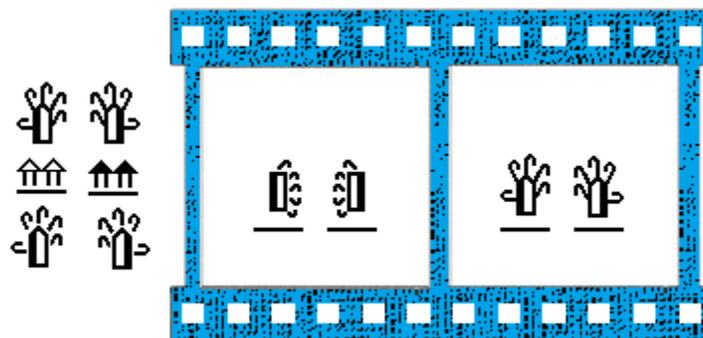
Yes first notation (ASL)

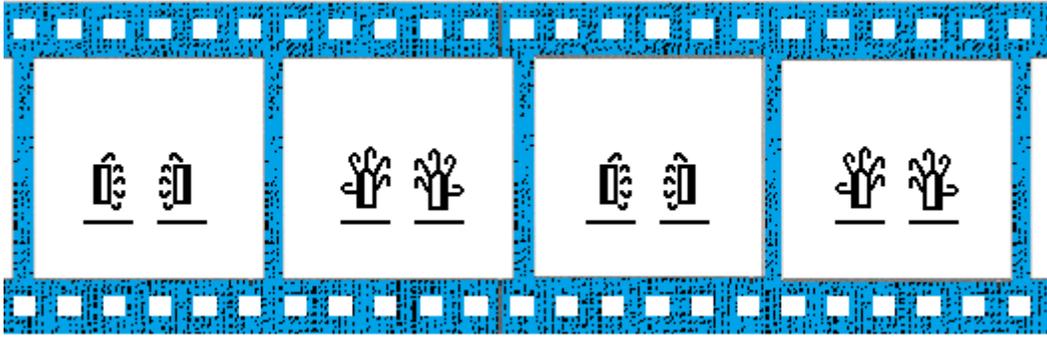


Yes, second notation (ASL)



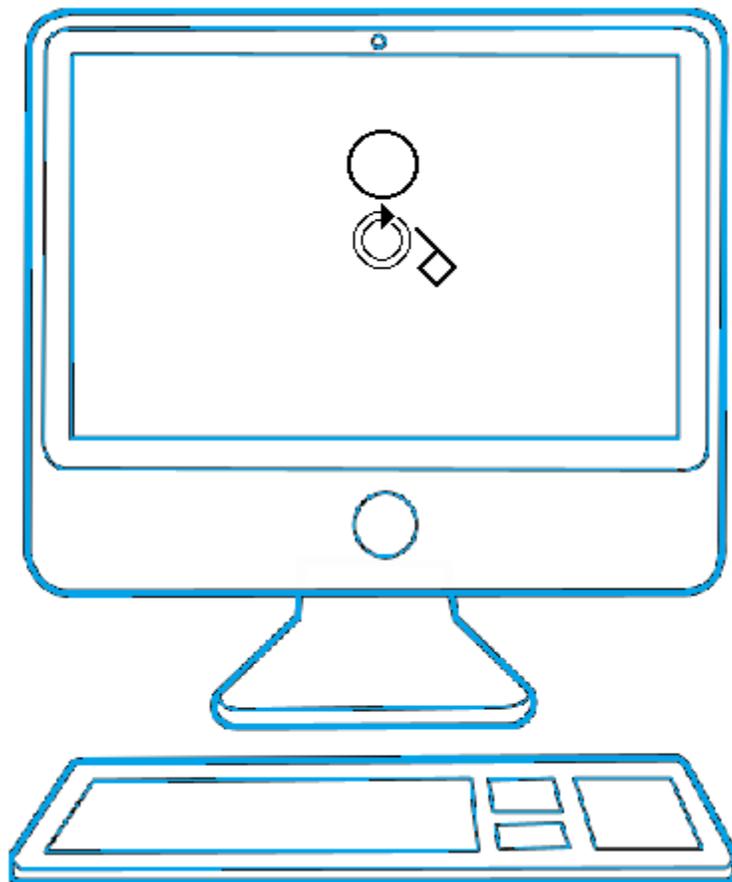
Basketball, first notation (ASL)



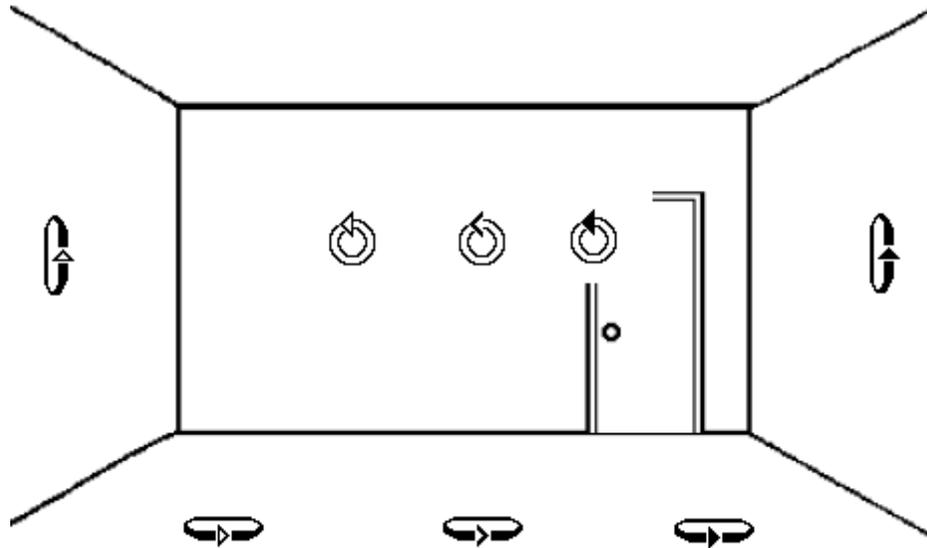


Basketball, first notation (ASL)

8. Circular Movements



Arm Circles on the Walls and Floor Planes



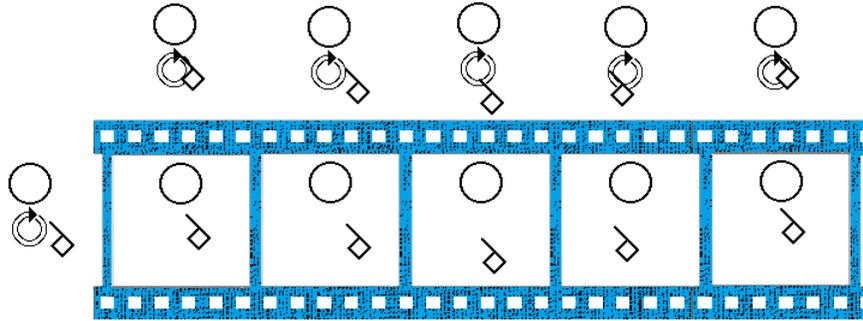
Arm Circles Side-To-Side on the Front Wall Plane



Arm circles parallel to the Wall Plane are double-stemmed circles. Arrows mark exactly where the circular movement starts. The wrist does not rotate; the forearm and the hand rotate together. The circle movement may be small or wide. The movement may be repeated. The Arm circles Movement symbol is not displayed in SignAnimating. It is represented by hand shapes moving up, down, left and right.

There can be 8 positions represented. At least three positions are necessary in SignAnimating to represent a circle. The number of positions used depends on the frame rate and the desired smoothness of the animation.

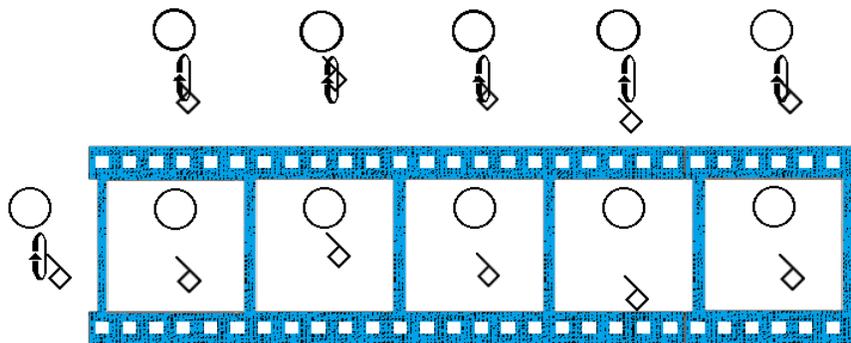




Arm Circles Forward-Back on the Sagittal Plane



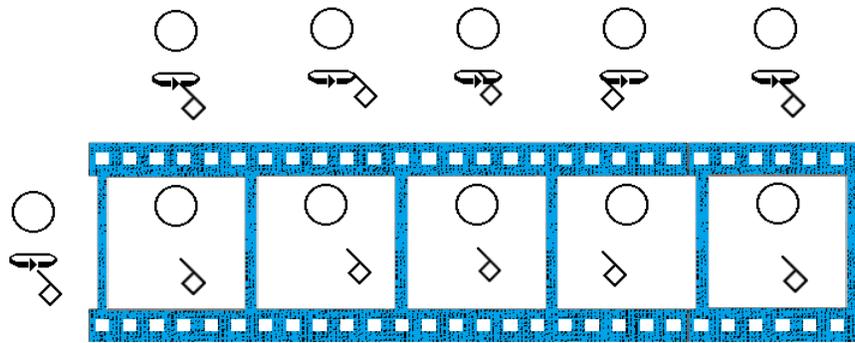
The Sagittal Plane is the Wall plane on the side. Arm circles parallel to the Sagittal Plane are single-stemmed circles. Arrows mark exactly where the circular movement starts. The circle movement may be small or wide. The arrow stem is larger close to the body. The movement may be repeated. The Arm circles Movement symbol is not displayed in SignAnimating. It is represented by hand shapes moving up, down, zoomed out (forward) and zoomed in (backward).



Arm Circles Forward-Back on the Floor Plane



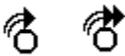
Arm circles parallel to the Floor Plane are single-stemmed circles. Arrows mark exactly where the circular movement starts. The circle movement may be small or wide. The arrow stem is larger close to the body. The movement may be repeated. The Arm circles Movement symbol is not displayed in SignAnimating. It is represented by hand shapes moving left, right, zoomed out (forward) and zoomed in (backward).

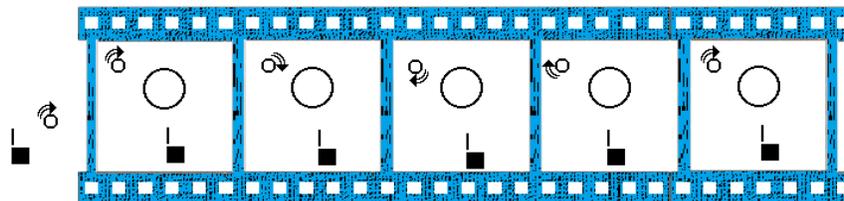


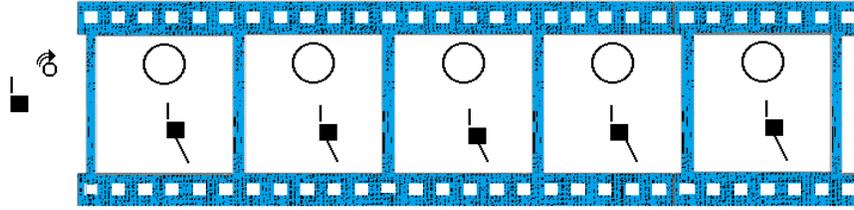
Arm Circle in Diagonal

 Arm circles may cross the 3 planes: horizontal, front wall and side wall. They are single-stemmed circles. Arrows mark exactly where the circular movement starts. The circle movement may be small or wide. The movement may be repeated. The Arm circles Movement symbol is not displayed in SignAnimating. It is represented by hand shapes moving left, right, up, down, zoomed out (forward) and zoomed in (backward).

Wrist Circles Parallel to the Front Wall Plane

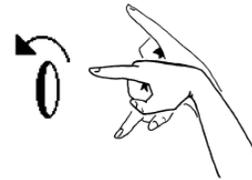
 Wrist circles are written with solid lines. Arrows are placed outside the circle. The arrows parallel to the Wall Plane are double-stemmed. Arrows mark where the circular movement starts. The movement may be repeated. The Wrist circles Movement symbol may be displayed in SignAnimating to indicate that the animated movement is due to the wrist, not the arm. It may be omitted if it is represented by hand shapes moving around a fixed forearm line.



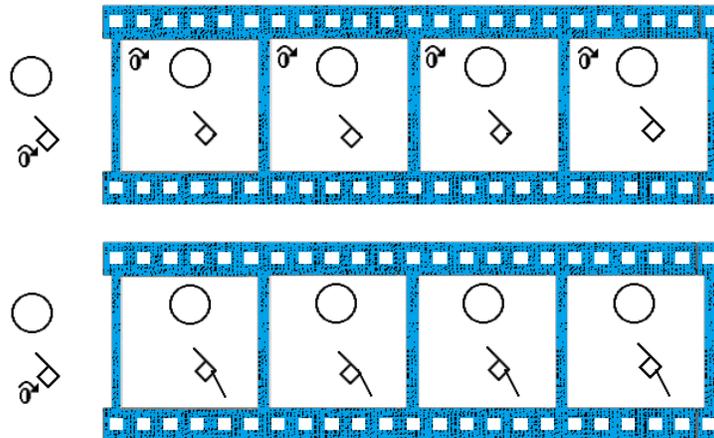


Wrist Circles Forward-Back on the Sagittal Plane

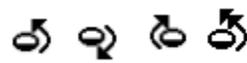

 Wrist circles are written with solid lines. Arrows are placed outside the circle. The arrows parallel to the Sagittal (side) Plane are single-stemmed. Arrows mark where the circular movement direction. The movement may be repeated. The Wrist circles Movement symbol may be displayed in SignAnimating to indicate that the animated movement is due to the wrist, not the arm. It may be omitted if it is represented by hand shapes moving around a fixed forearm line.

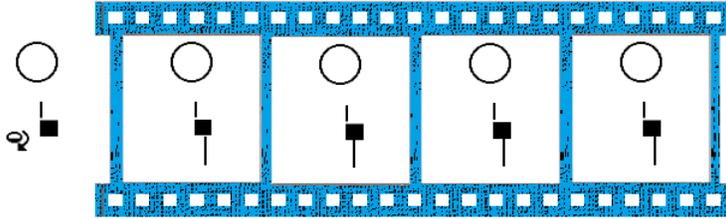
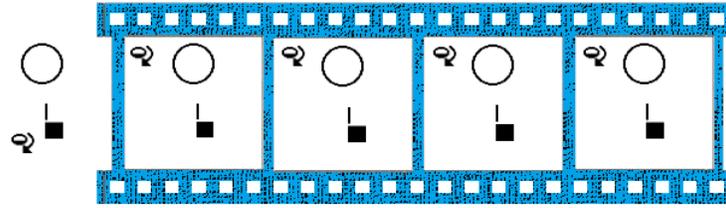


Illustrations from Parkhurst, Dianne and Parkhurst, Stephen (2010) A Cross-Linguistic Guide to SignWriting®. A phonetic approach.

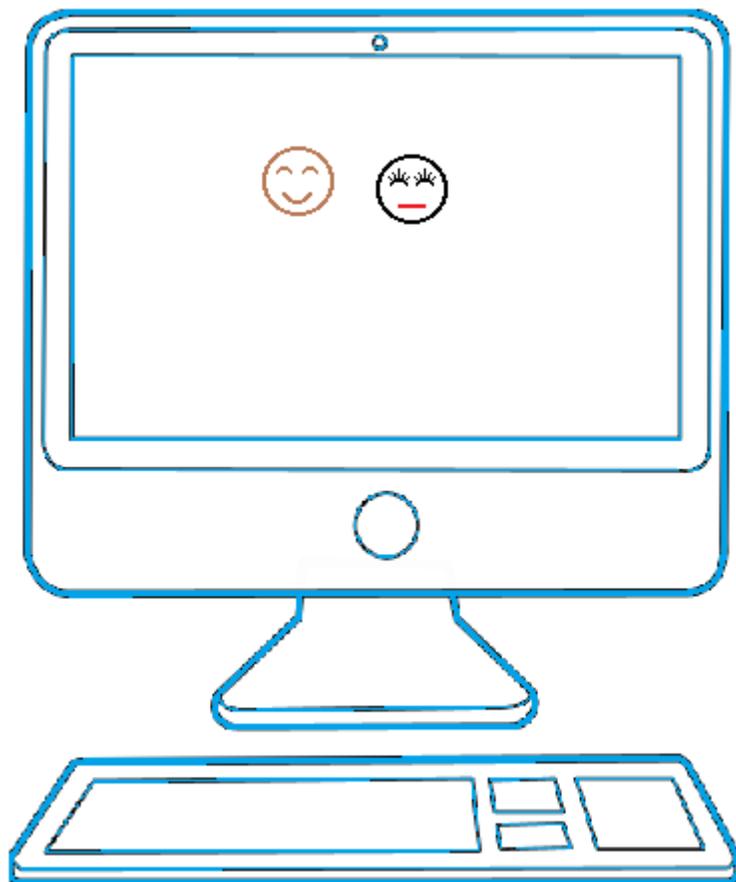


Wrist Circles Forward-Back on the Floor Plane


 Wrist circles are written with solid lines. Arrows are placed outside the circle. The arrows parallel to the Floor Plane are single-stemmed. Arrows mark where the circular movement direction. The movement may be repeated. The Wrist circles Movement symbol may be displayed in SignAnimating to indicate that the animated movement is due to the wrist, not the arm. It may be omitted if it is represented by hand shapes moving around a fixed forearm line.



9. Facial Expressions



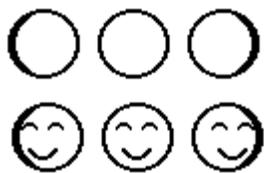
There are ten groups of facial expressions, including the forehead, eyebrows, eyes and gaze, ears and cheeks, breathing and nose, mouth, tongue, teeth, chin and other parts.

An important set of facial symbols is used in Wöhrmann's SpeechWriting system. It is summarized in the following table.

Wöhrmann SpeechWriting Symbols	SignWriting Symbol Names	German Phonetic Equivalencies
	Mouth Open Rectangle Yawn	ʌ a:
	Mouth Open Rectangle	ɛ ɛ:
	Mouth Open Oval	ə e:
	Mouth Open Oval Wrinkled	i i:
	Mouth Open Circle	ø ø: ɔ o:
	Mouth Open Wrinkled	u: ʊ y y:
	Mouth Open Rectangle Yawn and Mouth Open Wrinkled	au
	Mouth Open Circle and Mouth Open Oval Wrinkled	ɔ ʏ
	Mouth Open Rectangle Yawn and Mouth Open Oval Wrinkled	a i̯
	Mouth Closed Neutral	m
	Mouth Tense	b p
	Teeth on Lips	f v

Wöhrmann SpeechWriting Symbols	SignWriting Symbol Names	German Phonetic Equivalencies
	Tongue Tip Touches Inside Mouth	l
	Tongue Inside Mouth Relaxed (up)	d n ŋ t
	Mouth Open Forward	ʒ ʃ
	Teeth	z s ks ts
	Mouth Wrinkles Single	j
	Tongue Inside Mouth Relaxed (down)	k r g
	Mouth Wrinkles Double	x ç

Facial Circle

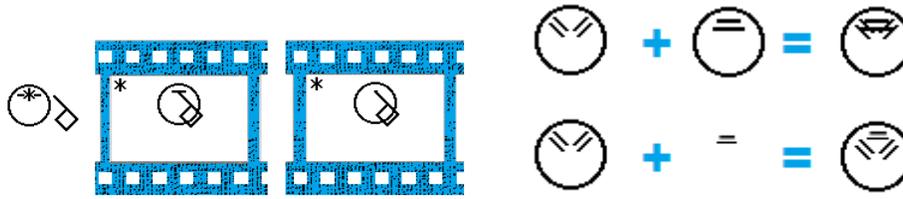


The neutral facial circle can be also represented as a whole face over to the left and the whole face to the right.

Forehead



The Forehead and the Forehead Contact symbol are not necessary in SignAnimating. The wrinkled Forehead symbol is used in SignAnimating but it may be shrunk to avoid overlap with the Eyes symbols.



Eyebrows

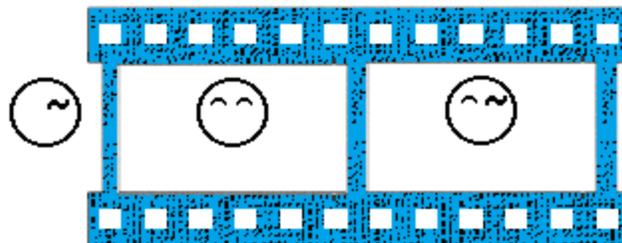
In SignAnimating, Eyes Symbols may be replaced by Eyebrow symbols.

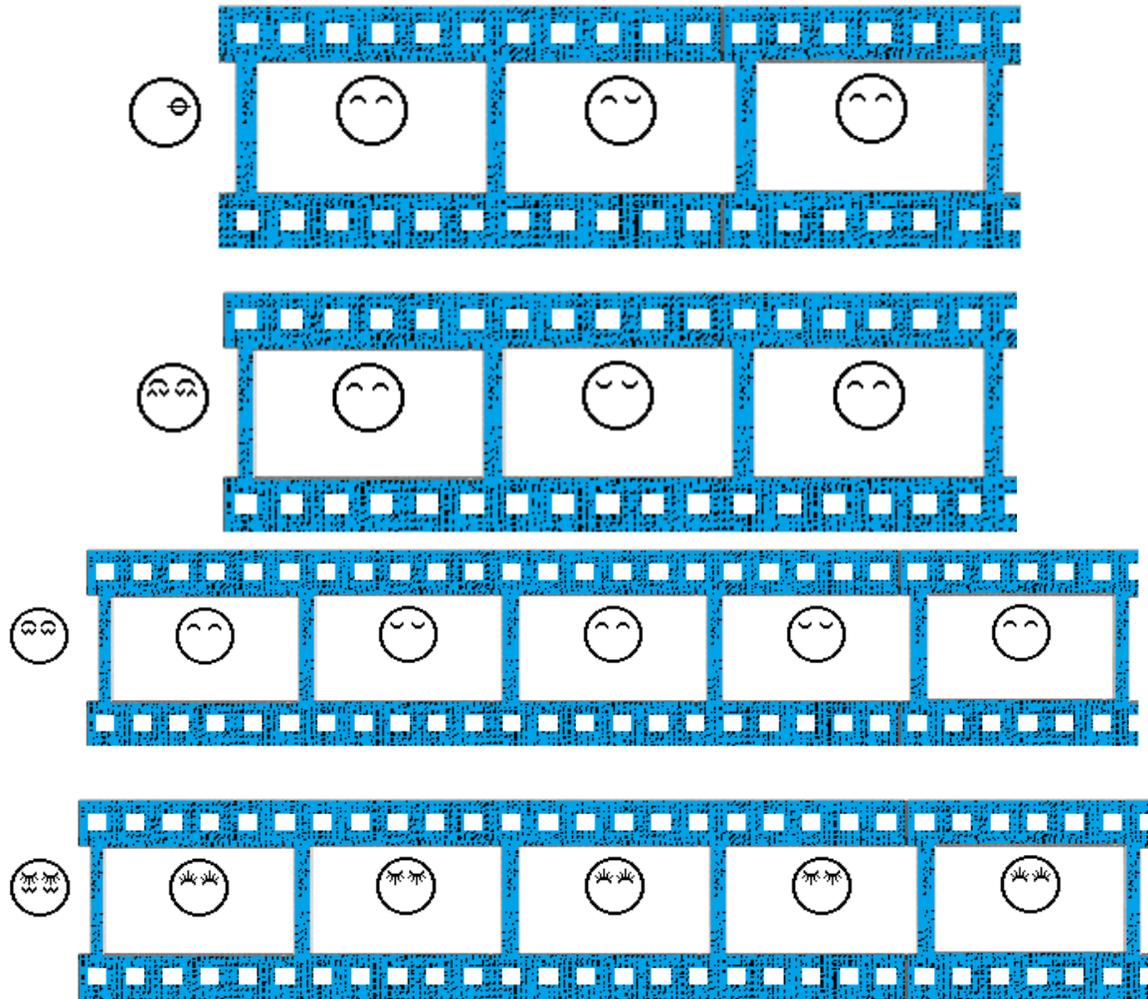


Questions symbols			
Closed question Symbol with a Yes or No answer.			Open question symbol with a detailed answer (whom, what, why, how, when...)
Symbols are zoomed out to represent that the head moves forward			

Eyes

The Eyes symbols are represented in SignAnimating like in SignWriting. The lid movement is animated. The eyelashes can be used to distinguish male and female signers.

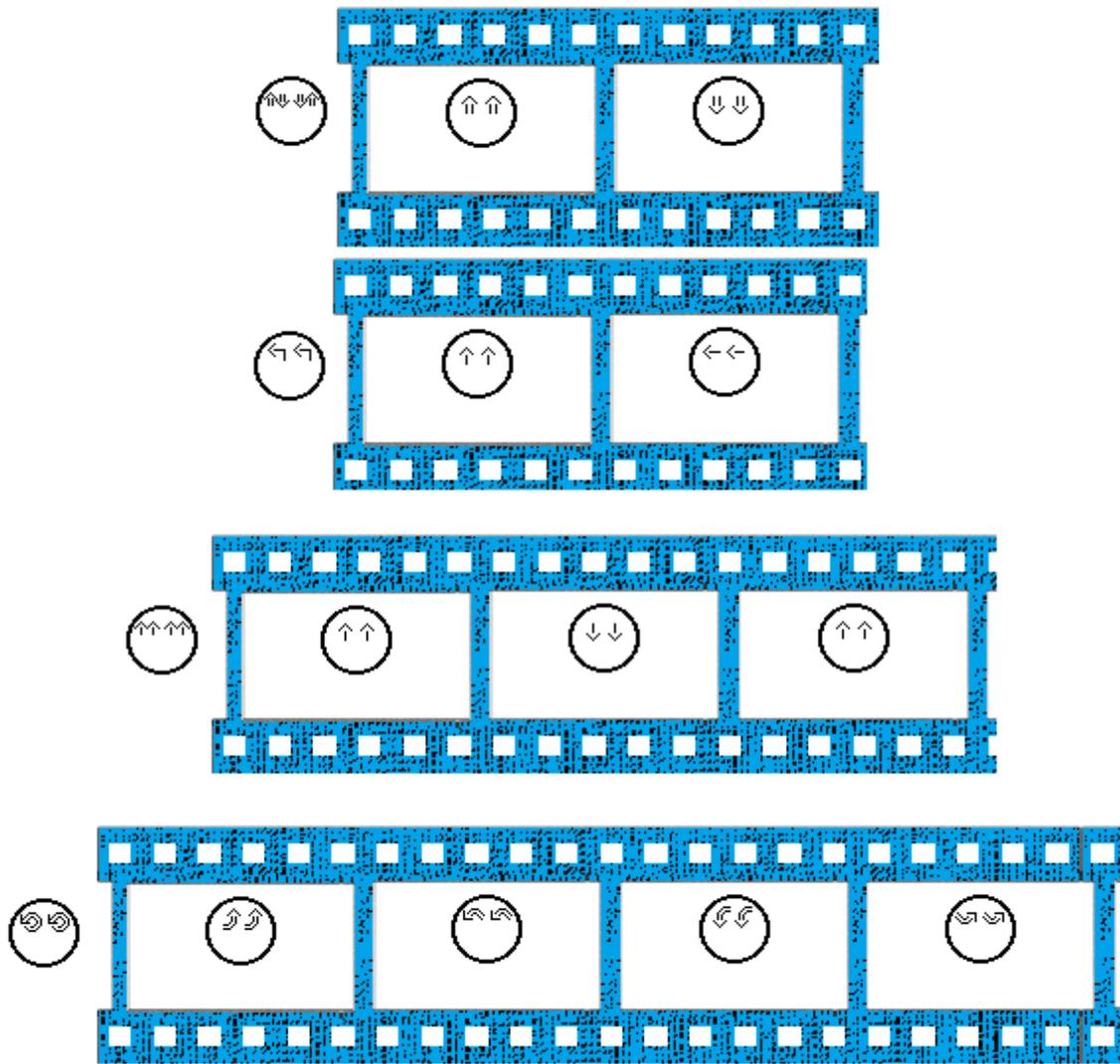




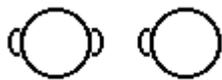
Eye Gaze

Eye Gaze symbols are represented in SignAnimating with SignWriting simplest symbols. Eye Gaze is important with directional verbs. The Floor Plane single-stemmed arrows and the Wall Plane double-stemmed arrows cannot be represented clearly with a deformation of the Eye symbols.

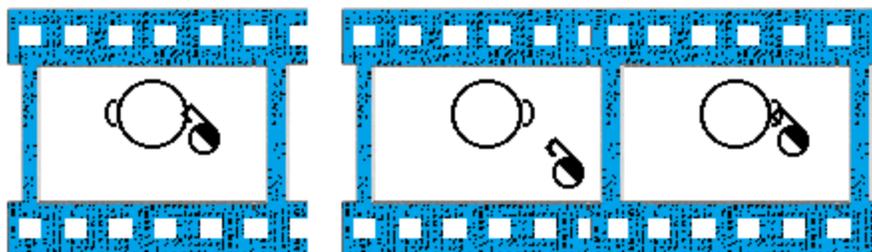




Ears



The Ear symbol may be displayed on both sides or only one side to ease the hand shape readability and depending on the intended meaning.



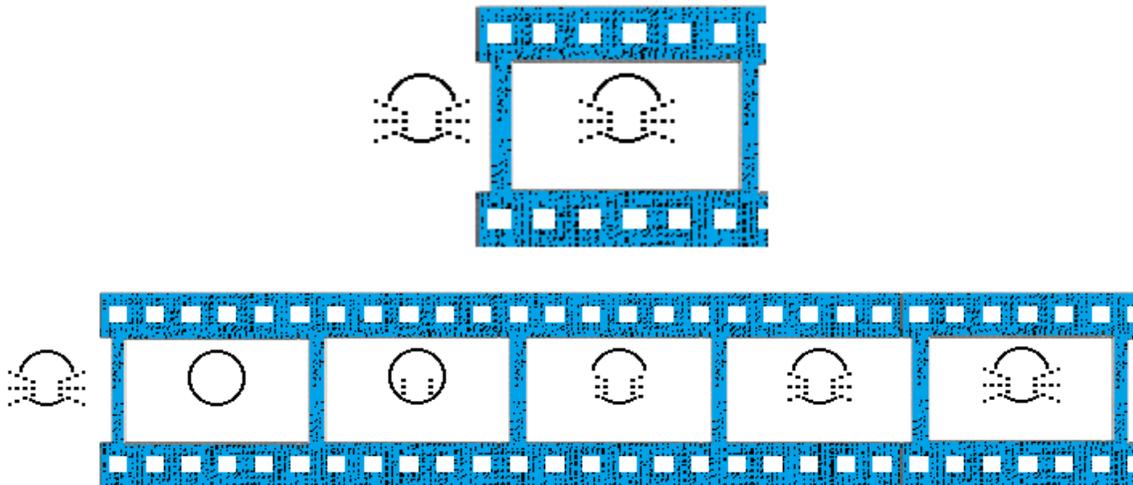
Cheeks and Breathing

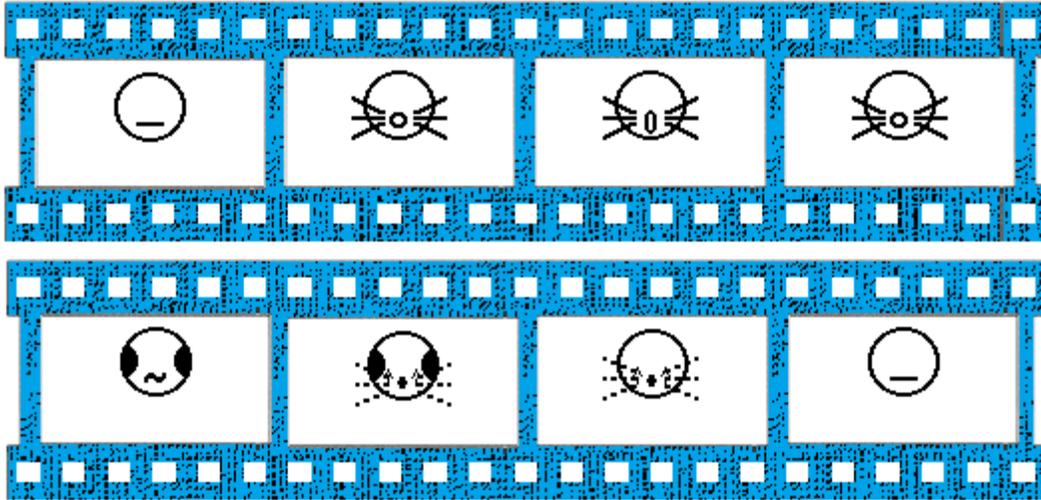
Breathing and Cheeks symbols are represented in SignAnimating the same way as with SignWriting. The Exhale and the Inhale symbols may be used but the Air Out and Air In symbols are more intuitive. The Air In and Air Out half symbols can be used only on one side to ease the reading of a hand shape.



Air Flow and Cheeks			
Exhale			Air Out
Inhale			Air In
Cheeks without Air			Cheeks Filled with Air
Cheeks Sucked-In			Cheeks Tense

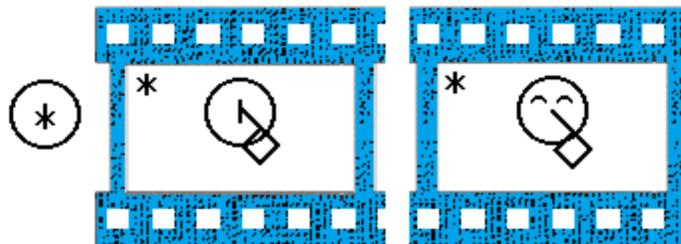
The breathing can be represented in SignAnimating like in SignWriting with one clear symbol, or it may be decomposed in several rapid frames depending on the intended effect.





Nose

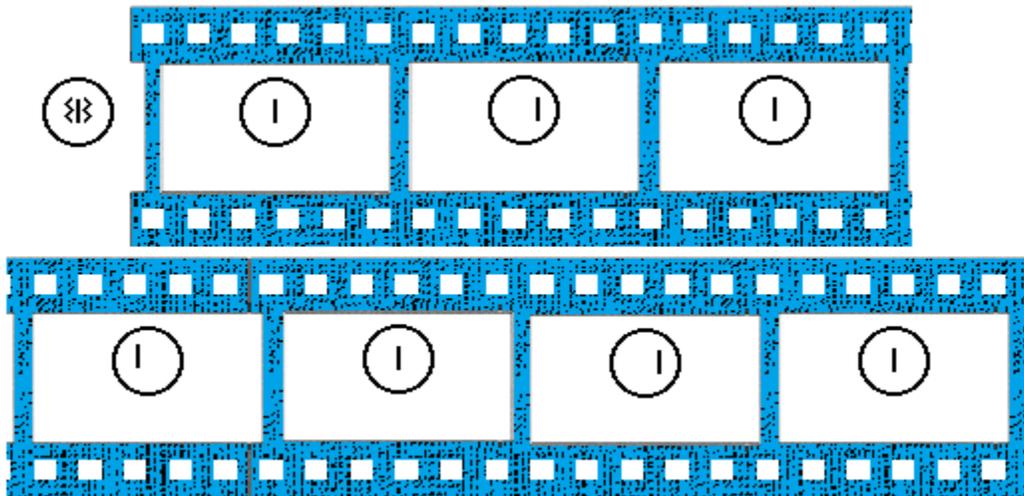
- ① Often, the Nose Neutral symbol and the Nose Contact symbol may be omitted in SignAnimating.



- ⦿ The Nose Neutral symbol is combined with the Air Sucking In symbol to represent a person breathing through the nose.

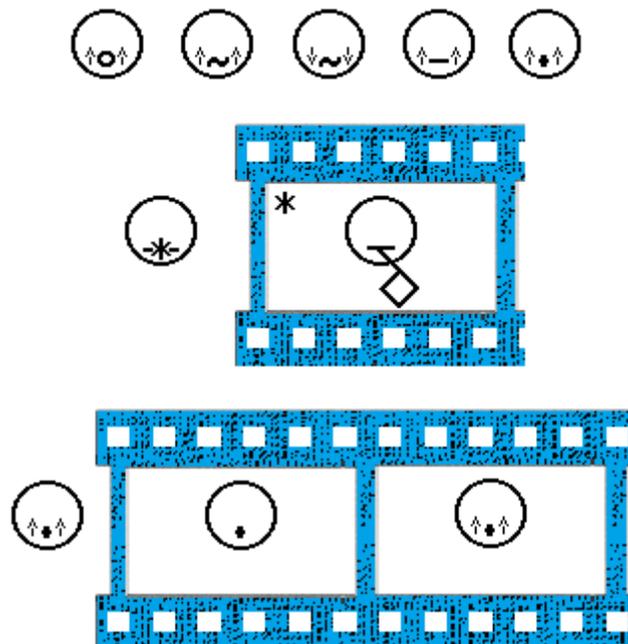
- ⦿ The wrinkled Nose symbol is used in SignAnimating but it maybe shrunk to avoid overlap with the Eyes symbols. It is often represented with Eyebrows Straight Down and a Mouth Frown

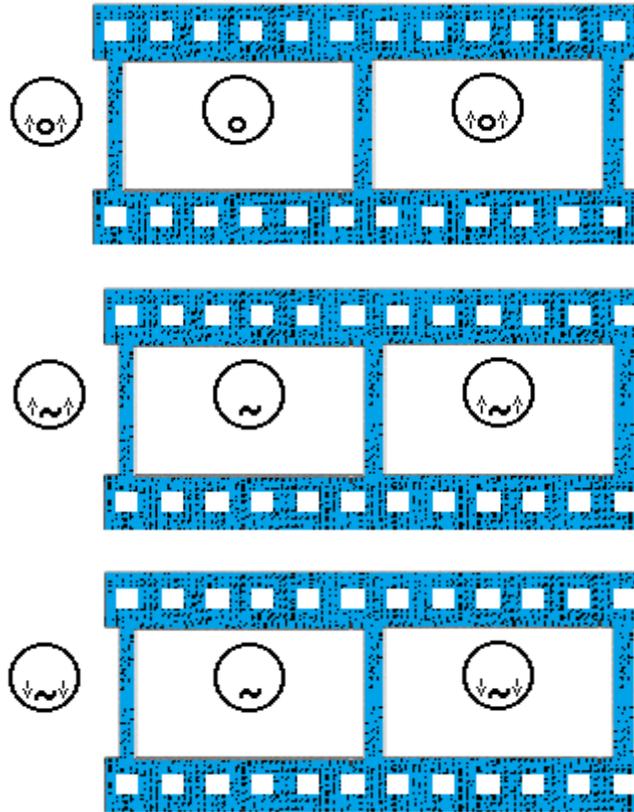
The Wiggle Nose symbol is replaced by a displacement of the nose.



Mouth

 Mouth symbols are represented in SignAnimating the same way as with SignWriting. The Floor Plane single-stemmed arrows cannot be represented clearly with a deformation of the mouth symbol. The Mouth Contact symbol is separated in two symbols in SignAnimating.





The Single and Double Wrinkles symbols may be displayed on both sides or only one side to ease the hand shape readability.



The mouth Neutral Straight Closed symbol represents a default facial configuration in SignAnimating. In SpeechWriting, it represents the phoneme “M. SpeechWriting could use the face with Eyes Open symbol to represent the absence of phoneme. The facial Closed Smile symbol is also a frequent configuration.



Nose Symbols



Often, the Neutral Nose and the Contact tip of the Nose symbols can be omitted in SignAnimating. They are necessary in SignWriting to avoid overlapping a hand shape and the face. In SignAnimating, a temporary overlap may be acceptable if the symbols are clearly displayed before or after.

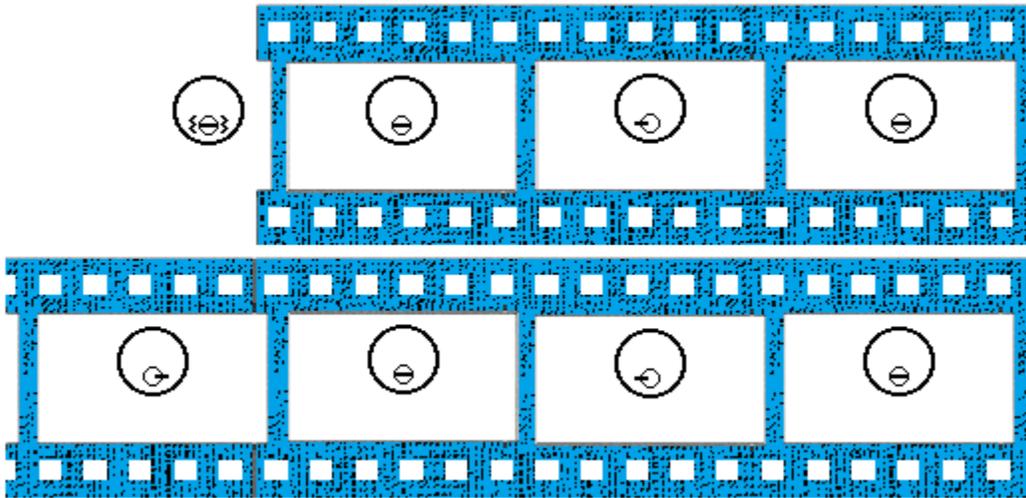
Lip Symbols

Lip Symbols		
		
Lips Sucked In Pressed Together	Lower Lip Over Upper Lip	Lip Corner Up Right
		
Tense Lips Protrude Forward	Kiss Protrudes Forward	Tense Lips Sucked Back

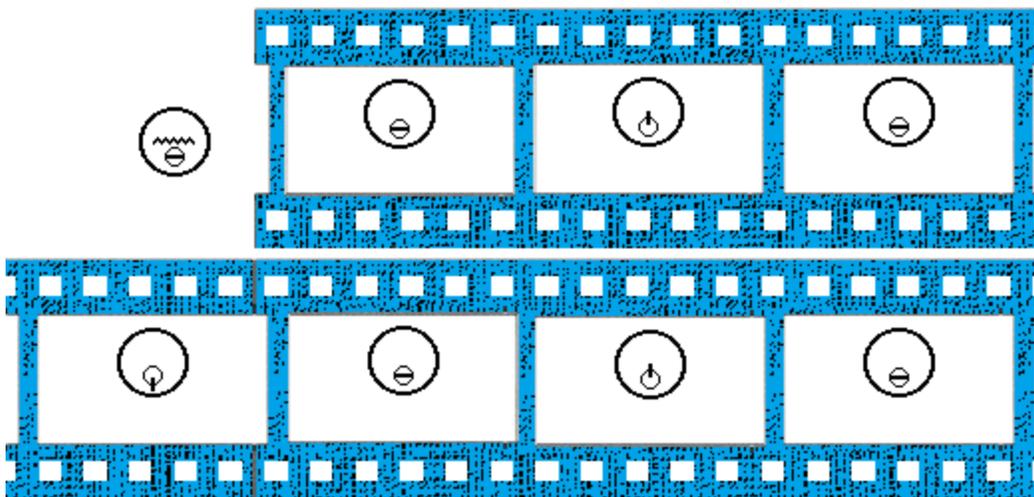
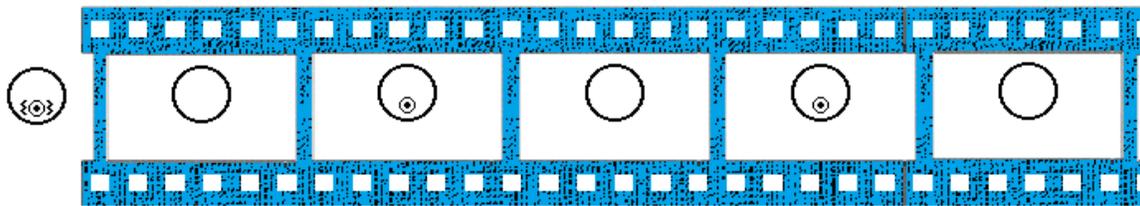
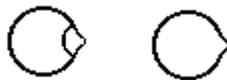
Tongue Symbols

The Tongue symbols represent interactions between the tongue, the teeth, and the lips. Tongue symbols are represented in SignAnimating the same way as with SignWriting.

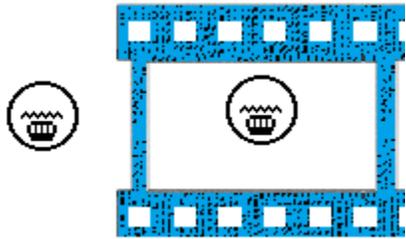
Tongue symbols		
Tongue Sticks Outside and Up	 	Tongue Sticks Outside Straight Center Mouth
Tongue Licks Lip Outside And Down	 	Tongue Push Lip Out And Down
Upper Teeth Touch Tongue	 	Lower Teeth Touch Tongue
Tongue Tip Touches Inside Up	 	Tongue Tip Touches Inside Down
Tongue inside Rests Roof Mouth	 	Tongue inside Rests bottom Mouth



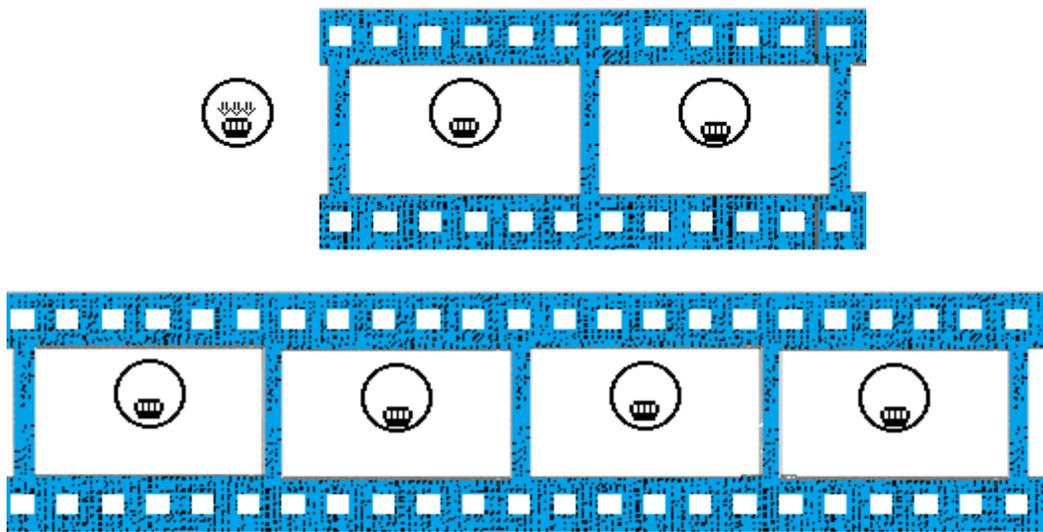
When the tongue pushes the inside of the cheek, the simplest symbol is used, without the area symbol.



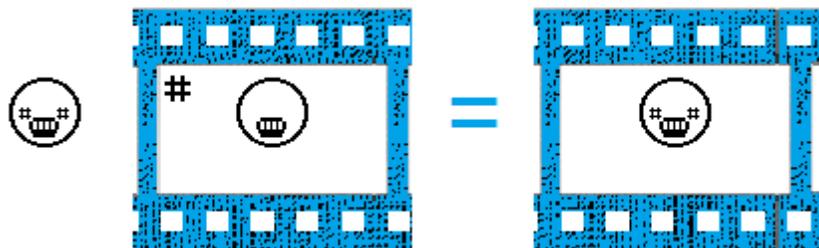
The small chattering of teeth on the tongue is represented in SignAnimating like in SignWriting.

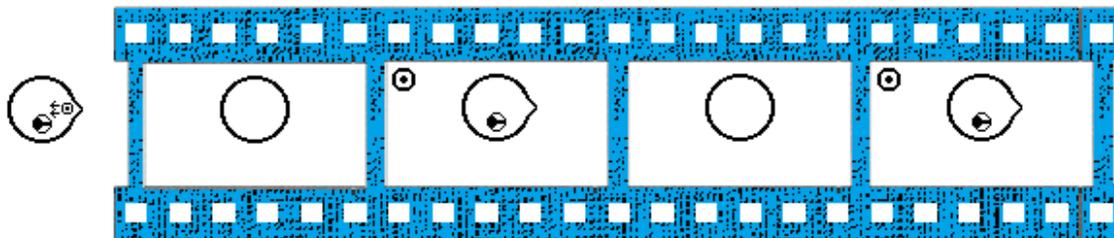


The down-down-down movement of the teeth on the tongue is represented in SignAnimating by moving the symbol down three times.



The biting of the tongue is can be represented two ways. If a hand shape overlaps the face, the strike symbol is placed in the animation corner. If the strike symbol is ambiguously applicable to a hand shape contact or a mouth contact, the strike symbol is placed in the face.



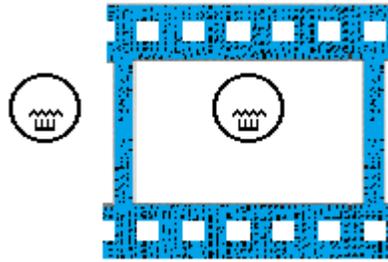


Teeth Symbols

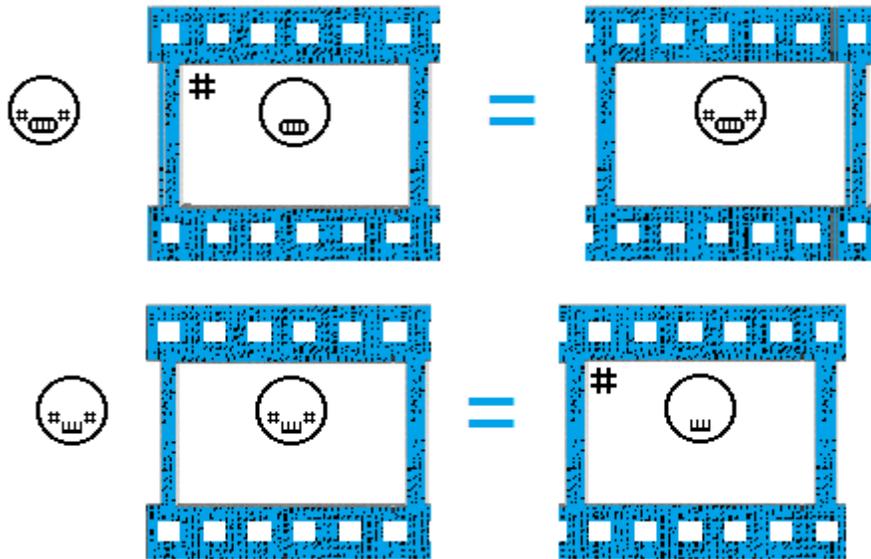
The Teeth symbols represent interactions between the teeth, the tongue, and the lips. Teeth symbols are represented in SignAnimating the same way as with SignWriting.

Teeth symbols				
Upper teeth touch lower lip				Lower teeth touch upper lip
Upper teeth touch tongue				Lower teeth touch tongue
				Teeth Bite Right Side of Lip

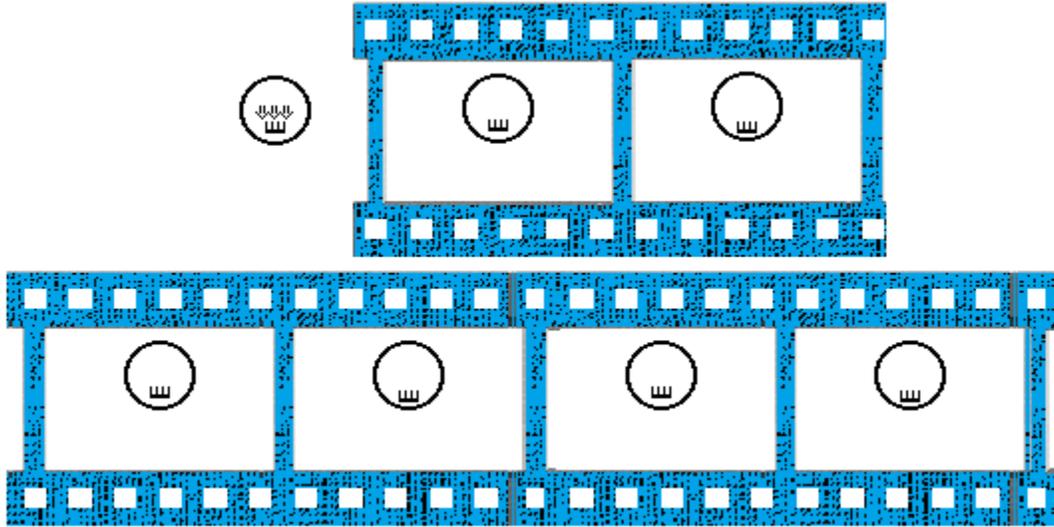
The small chattering of teeth on the lip is represented in SignAnimating like in SignWriting.



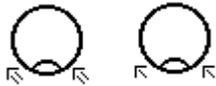
The biting and the biting of the lower lip can be represented two ways. If a hand shape overlaps the face, the strike symbol is placed in the animation corner. If the strike symbol is ambiguously applicable to a hand shape contact or a mouth contact, the strike symbol is placed in the face.



The down-down-down movement of the teeth on the lip is represented in SignAnimating by moving the symbol down three times.

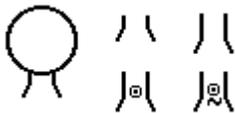


Chin Symbols

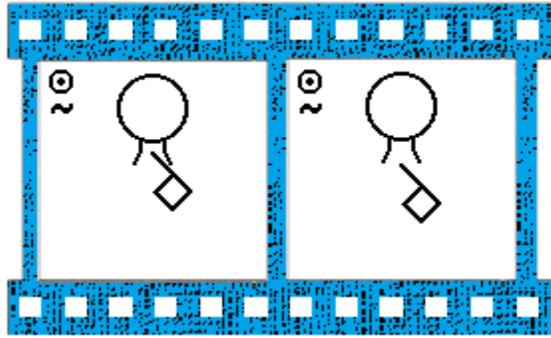


Chin symbols are represented in SignAnimating the same way as with SignWriting. The Floor Plane single-stemmed arrows and the Wall Plane double-stemmed arrows cannot be represented clearly with a deformation of the Head symbol.

Neck Symbols

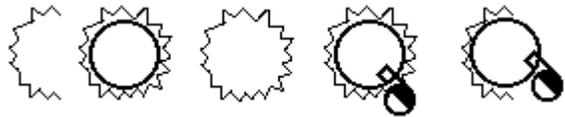


The Neck Symbol may be short or long. It is used to represent a hand shape close or touching the neck. Contact and tension symbols are in the neck symbol in SignWriting to avoid overlapping a hand shape and the neck. Contact and tension symbols are placed in the top left corner for SignAnimating. This avoids a useless overlap in SignAnimating of the hand shape with the contact and tension symbol. In SignAnimating, a temporary overlap of the hand shape and the neck may be acceptable if the symbols are clearly displayed before or after.



Excited Symbols

The Exited Symbol may be displayed on both sides or only one side to ease the hand shape readability.



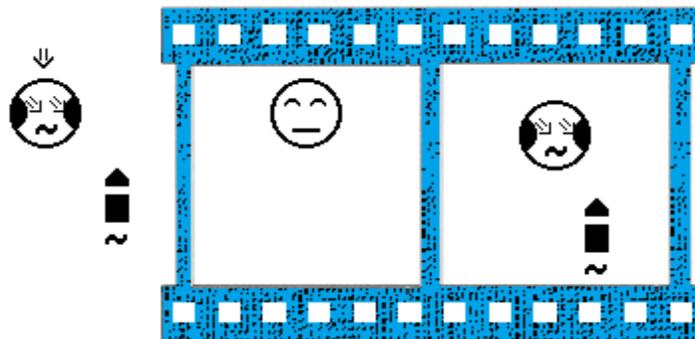
Hair Symbols

The Hair symbol may be displayed on both sides or only one side to ease the hand shape readability.

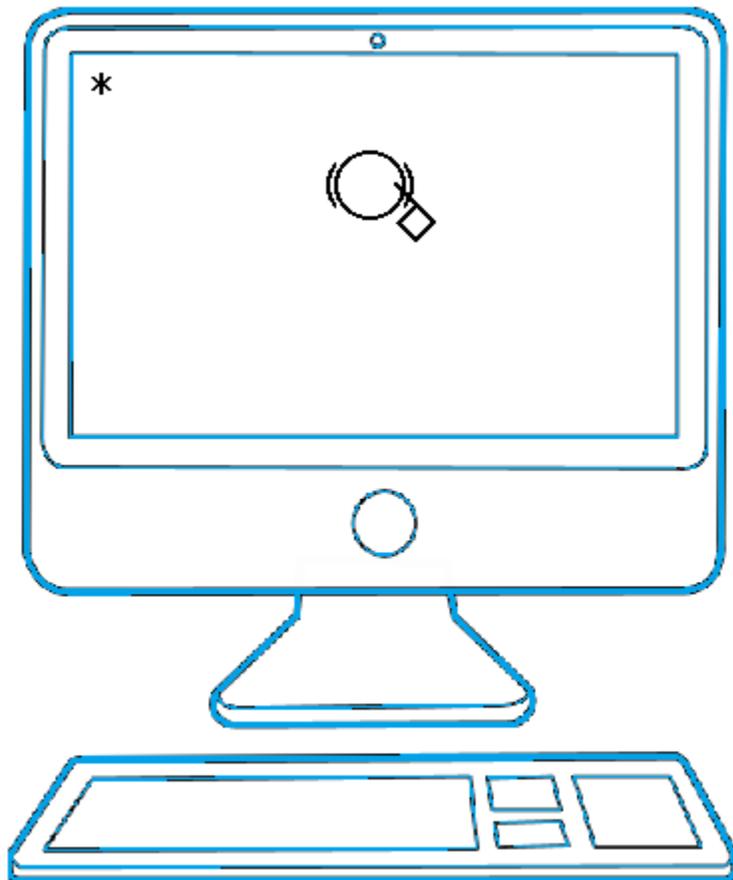


Classifiers and Facial Symbols

Classifiers are accompanied with specific sets of symbols and are represented accordingly in SignAnimating.



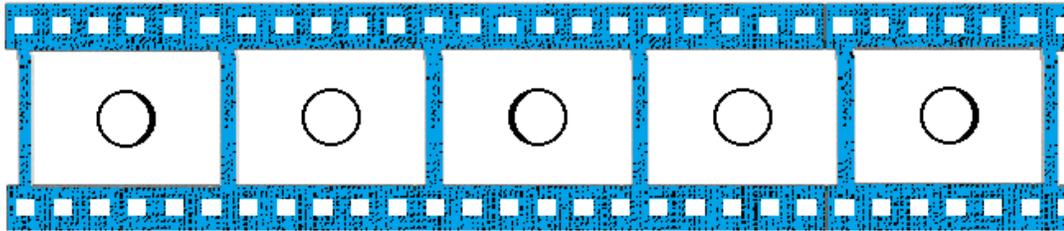
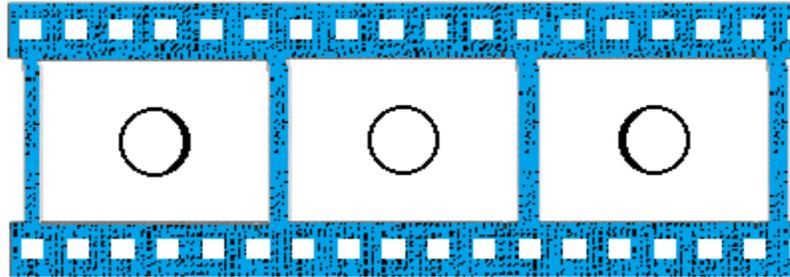
10. Head



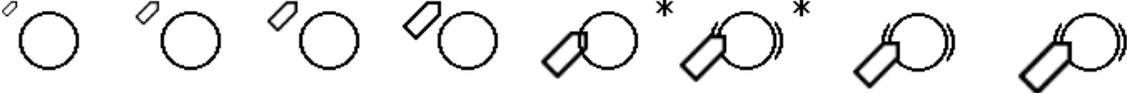
Head Viewpoints

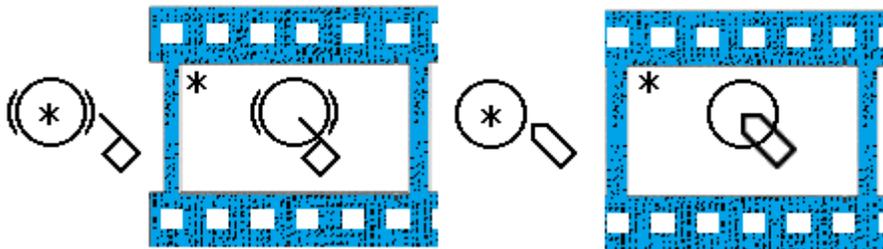


The head may be turned right or left.



The Head Back view is a Head Front view with arch on both sides.

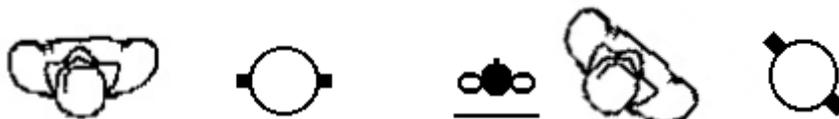
Depth representation in SignAnimating and in SignSpelling	
	Hand shape in front of the head
* 	Zoomed in hand shape touching the face
* 	Zoomed in hand shape touching the back of the head
	
	



The side view is represented by a head profile. No frontal plane line is displayed in SignAnimating. In this view, it is ambiguous if the hand shape is centered or lateral.



The Top view is represented by a head with shoulders like in Signwriting and SignSpelling. The body may rotate.

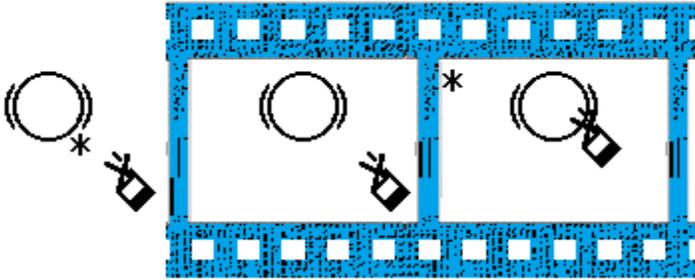


Conversations		
		Side View conversation
		Top View conversation
		Front View conversation

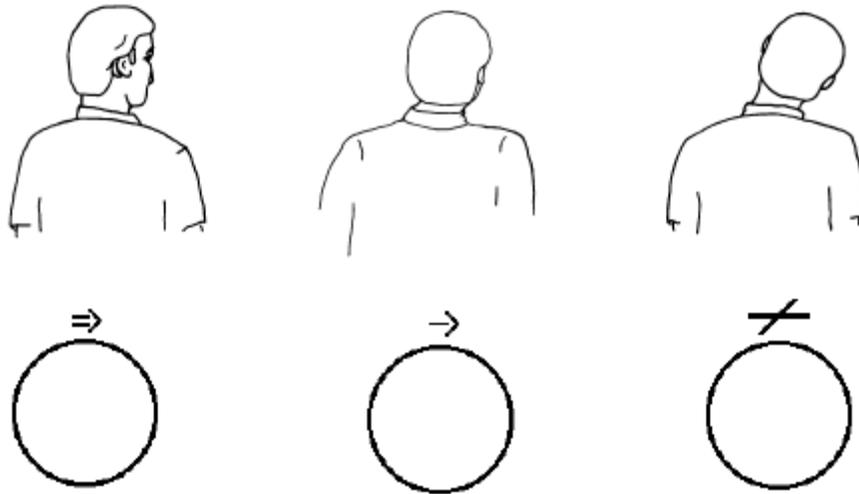
Rim of Head and Face



In SignAnimating, the Rim of Head and Face symbols are not used. Their meaning is conveyed in the hand shape position.

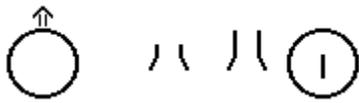


Comparison of Face and Head Movements

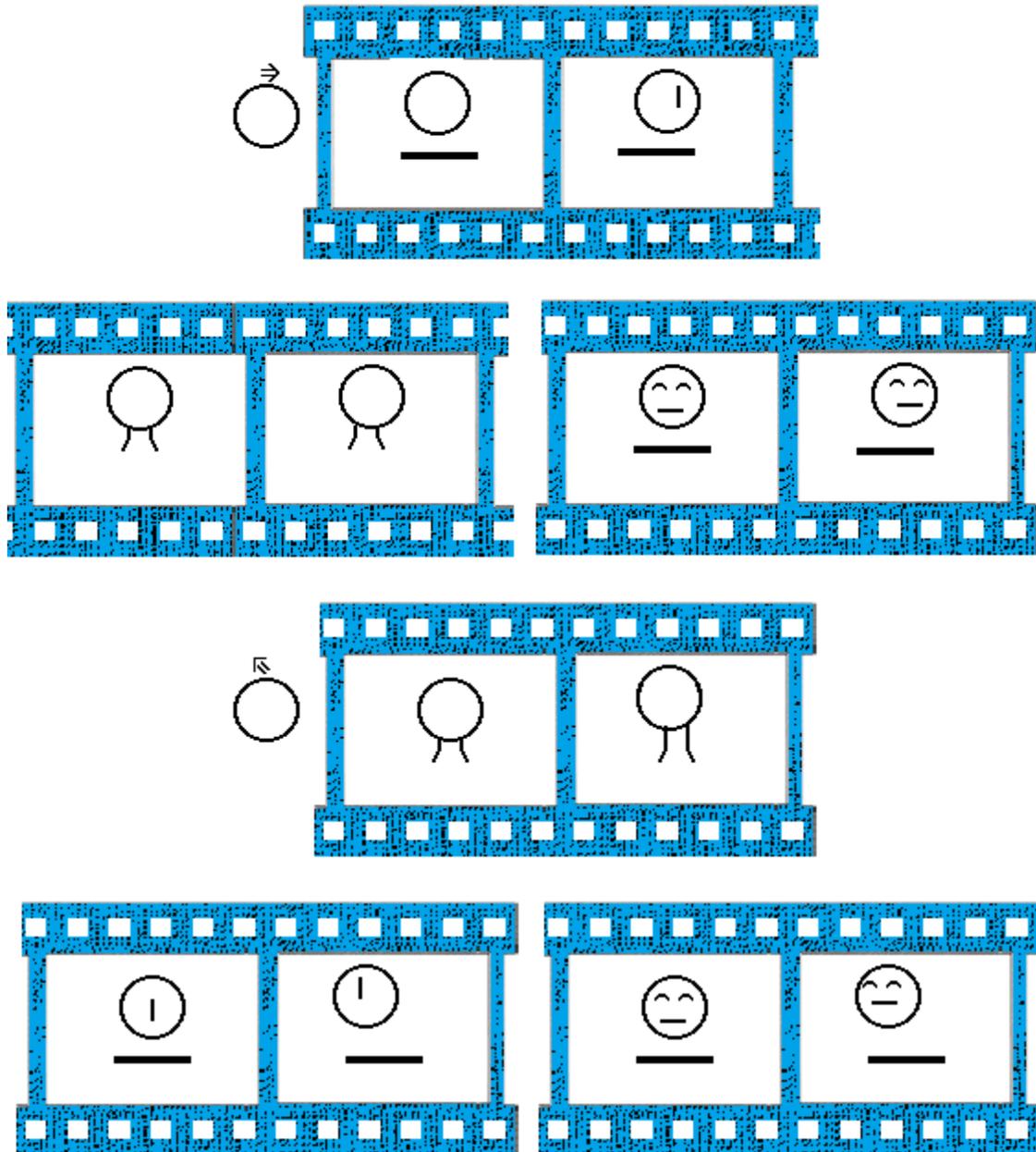


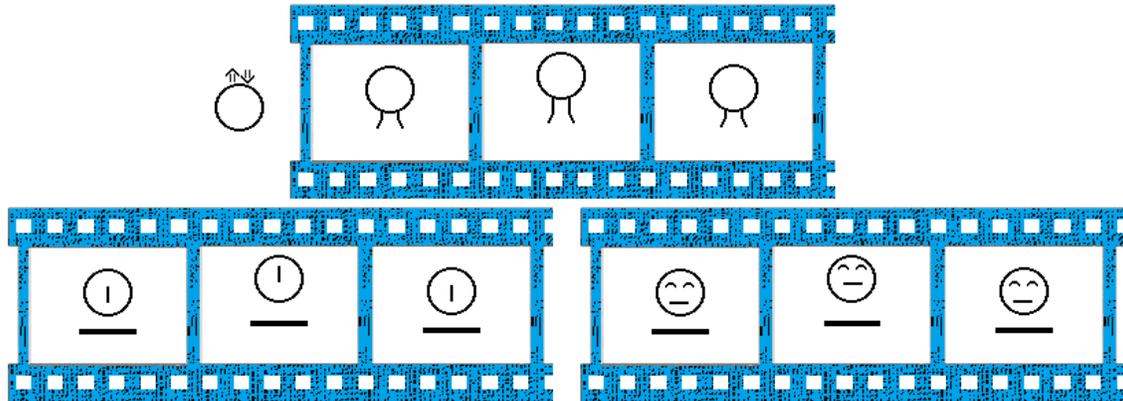
Illustrations from Parkhurst, Dianne and Parkhurst, Stephen (2010) A Cross-Linguistic Guide to SignWriting®. A phonetic approach.

Face Direction Movement

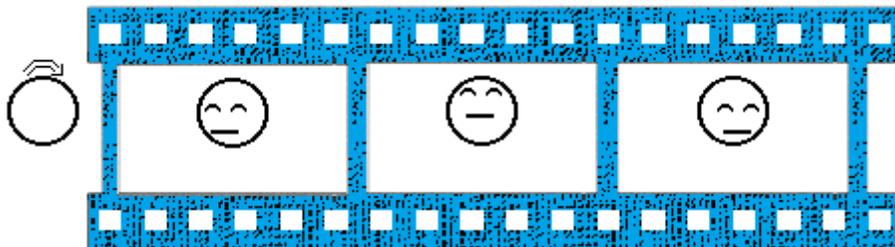


With Face Direction Movement symbols, the nose moves in the direction of the double-stemmed arrows. The neck bends and stretches as the nose moves. In SignAnimating, the Face Direction Movement symbols are not used. Their meaning is conveyed in the face direction.



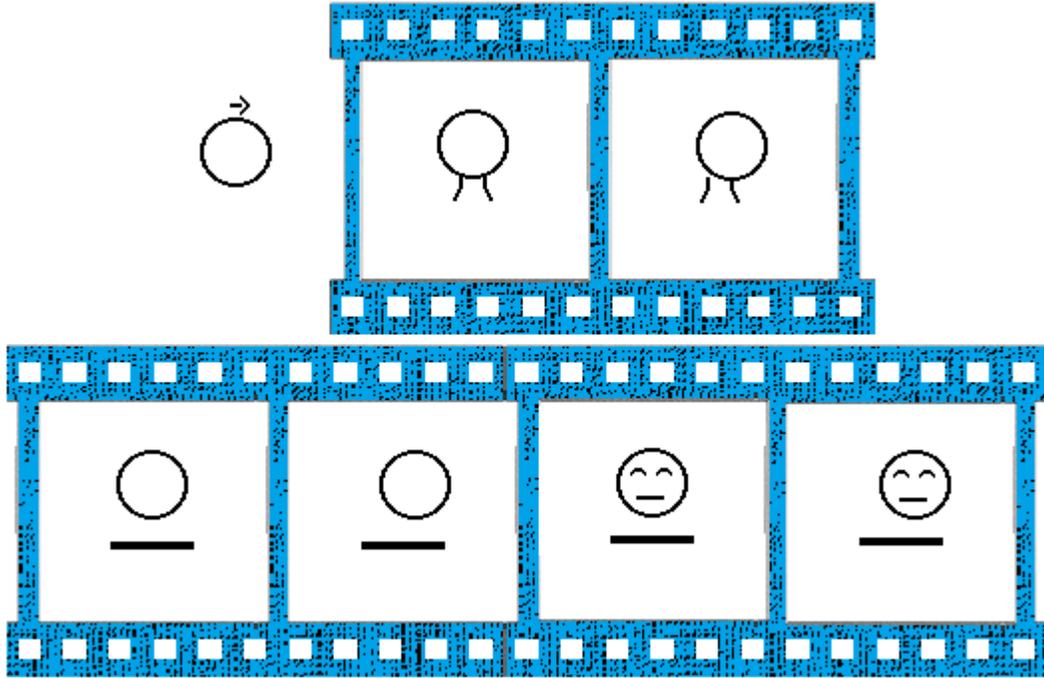


In SignAnimating, the Face Rotation symbols are not used. Their meaning is conveyed in the face direction.



Head Direction Movement

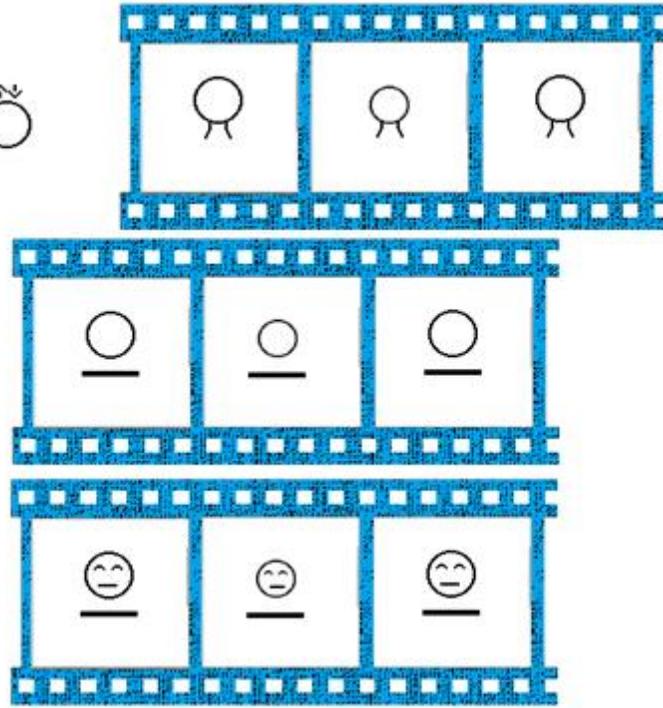
With Head Direction Movement symbols, the entire head travels in the direction of the single-stemmed arrows. The nose remains straight, and the neck does not bend. In SignAnimating, the Head Direction Movement symbols are not used. Their meaning is conveyed in the head position relatively to the shoulders and by a zoom out representing a movement forward. The neck and the shoulder lines are optional; they are used in the examples for better readability.



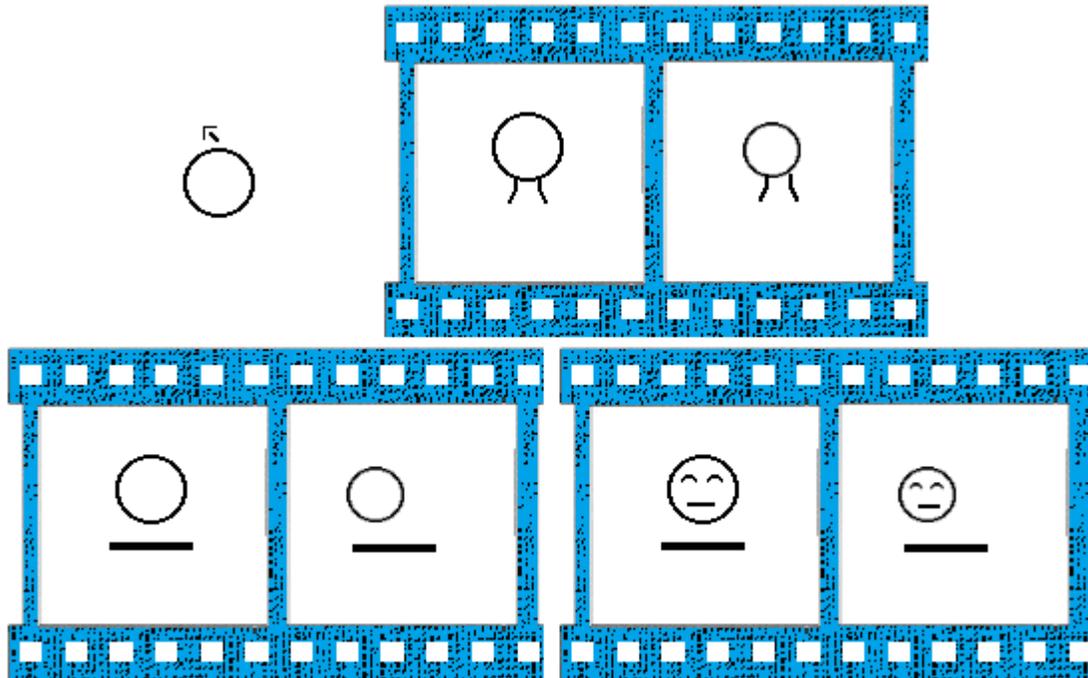
When the head moves backward, it is zoomed in. The backward single-stemmed symbol does not contain a moving down motion. The forward single-stemmed symbol does not contain a moving up motion.

Head Movement Backward			Head Movement Forward		

2

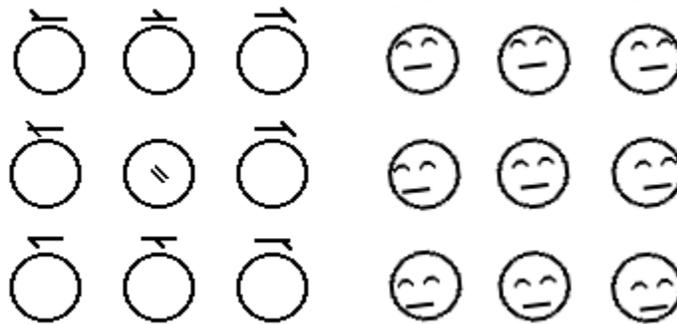
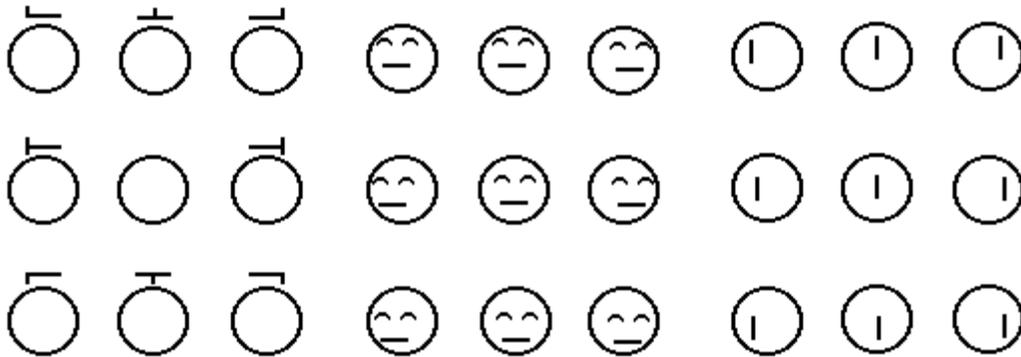


5

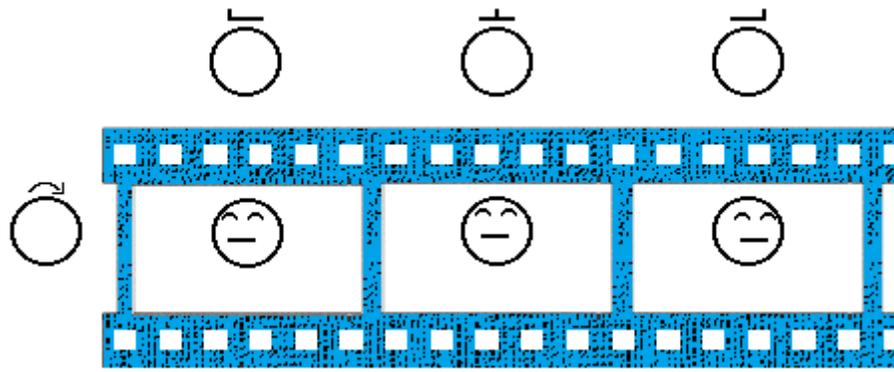


Face Direction Lines

 Face Direction Lines are not movement. They are stable positions marking the direction of the nose and face, relating to the shoulders. They are not displayed in SignAnimating.



 Note: SignWriter Studio™ does not support rotating the eyes and the mouth inside the face. Manual image editing is required. The face tilt is represented with the tilt nose in Signwriting.

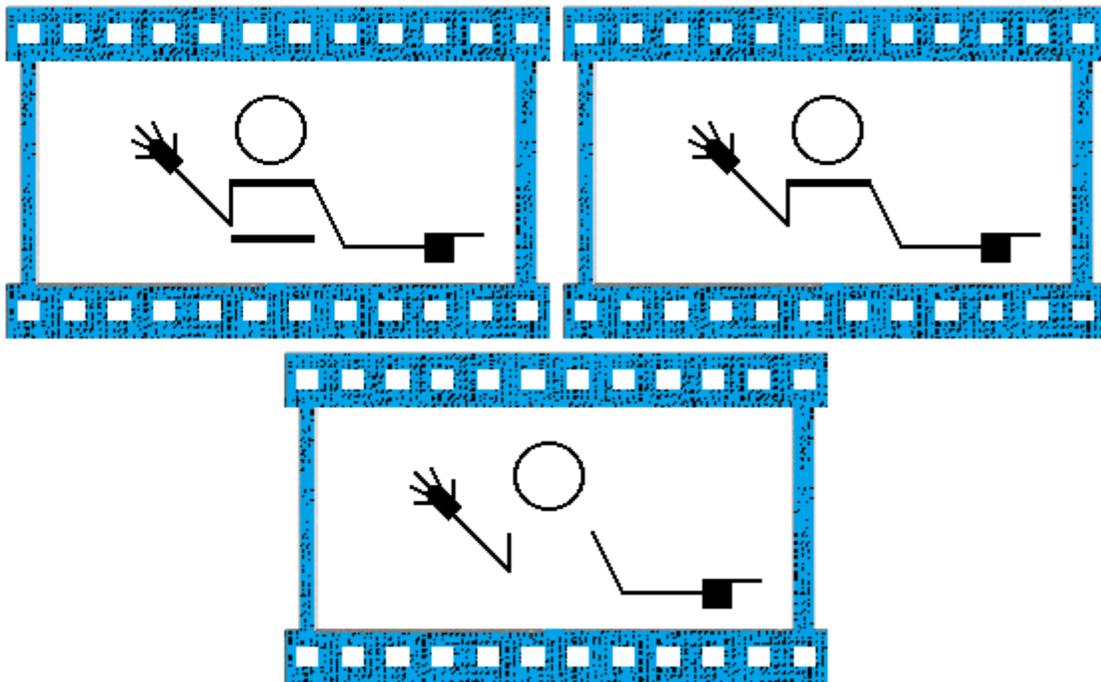


11.Body



Limbs

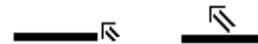
In SignAnimating, limbs can be represented during a contact. They may also be represented continuously throughout the animation. When a hand touches the arm, a long line represents the arm. The line should be long enough to be distinguished from the fingers. If the focus is the wrist or the forearm, the line is attached to a hand shape. If the focus is the arm, it may be attached to the shoulder.



Body Movements

The body movements represent three amplitude of movement: only the shoulders, the torso including the shoulders or the body starting from the hips.

The arrows for the shoulder are beside the moving shoulders. The arrows for torso movements are above the middle of the shoulder line.



A lateral displacement of the shoulders can be written relatively to the frontal plane or the floor plane.

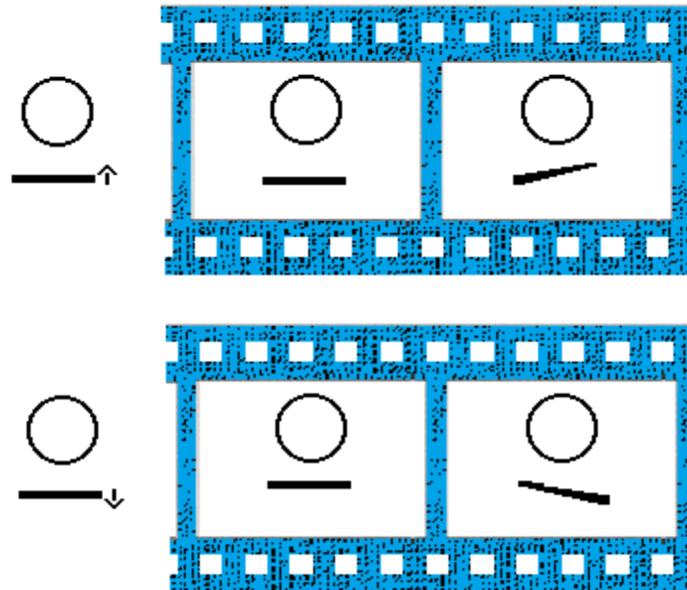
	Forward	Left	Left	Forward Left
Head				
Shoulders				
Torso				
Body				
None of these symbols implies a vertical displacement.				

	Up	Left	Left	Up Left
Head				
Shoulders				
Torso				
Body			-	

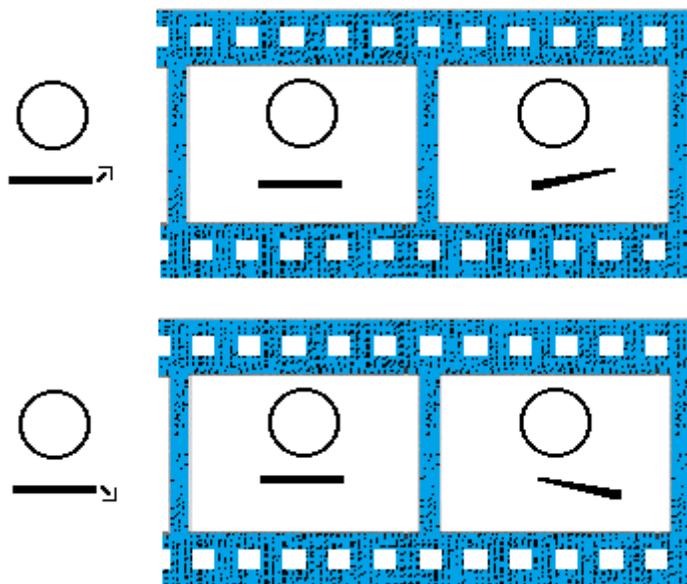
	Default	Torso Up Left Translation	Torso Up Right Rotation	Body Right Forward Rotation	Shoulder Right Forward Rotation	Torso Right Forward Rotation
SignWriting						
SignAnimating	 	 	 	 	 	

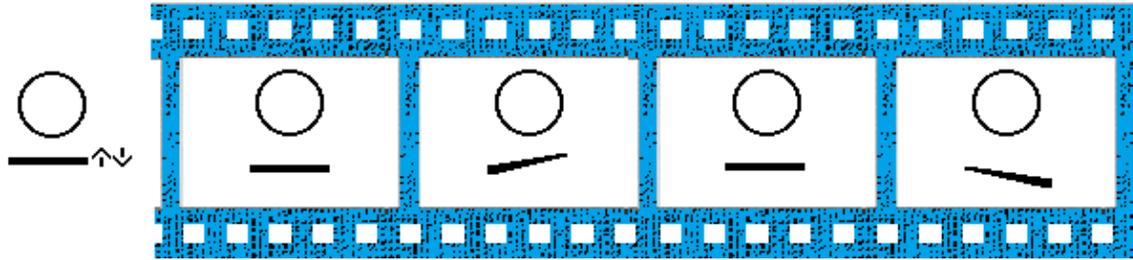
Shoulders Moves Forward and Backward

 In SignAnimating, when a shoulder moves forward, it is zoomed out. When a shoulder moves backward, it is zoomed-in. To distinguish between a right shoulder that moves forward and left shoulder that moves backward, the shoulder that does not move remains at the same position as in the neutral position (laterality and height). Also, the complete shoulder line may need to be zoomed in to keep the same thickness to the shoulder that does not move.



The shoulder moving forward may also move laterally.

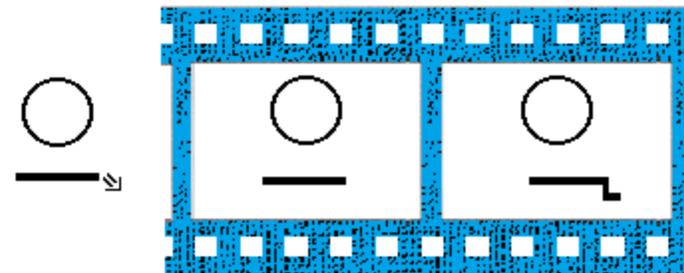
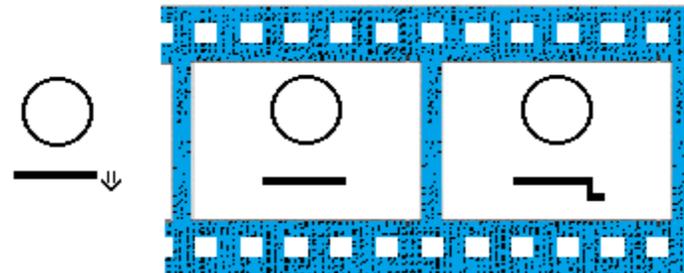
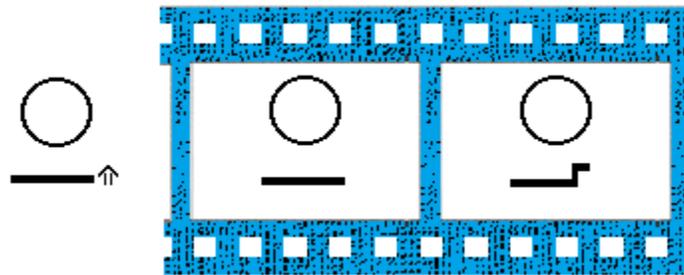


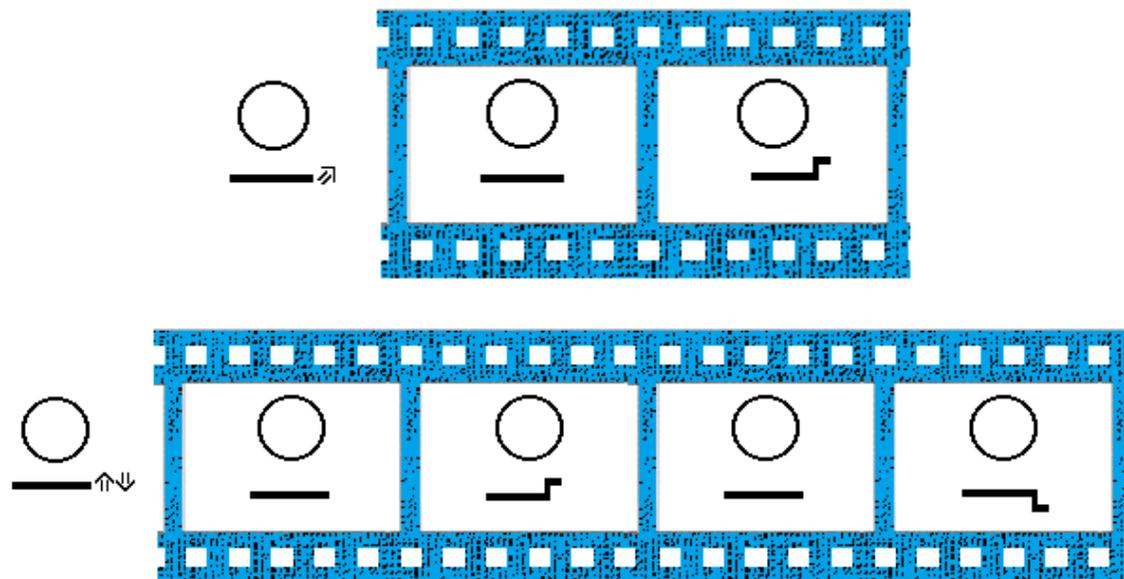


Shoulders Moves Up and Down

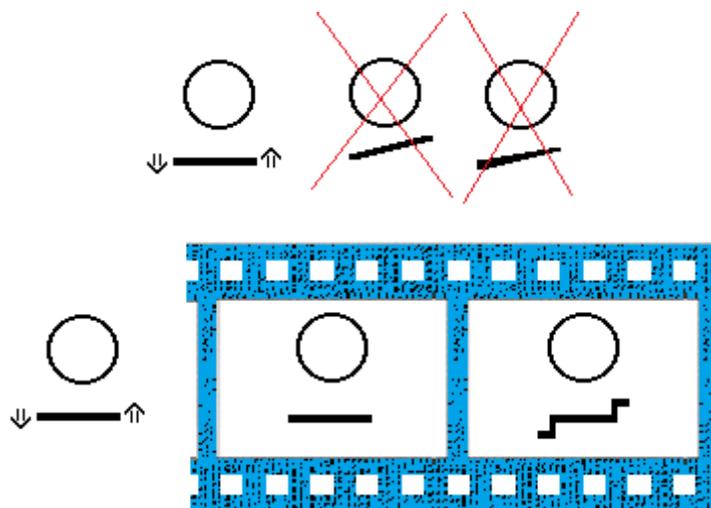


In SignAnimating, when a shoulder moves up or down, only the corresponding shoulder position is raised or lowered.



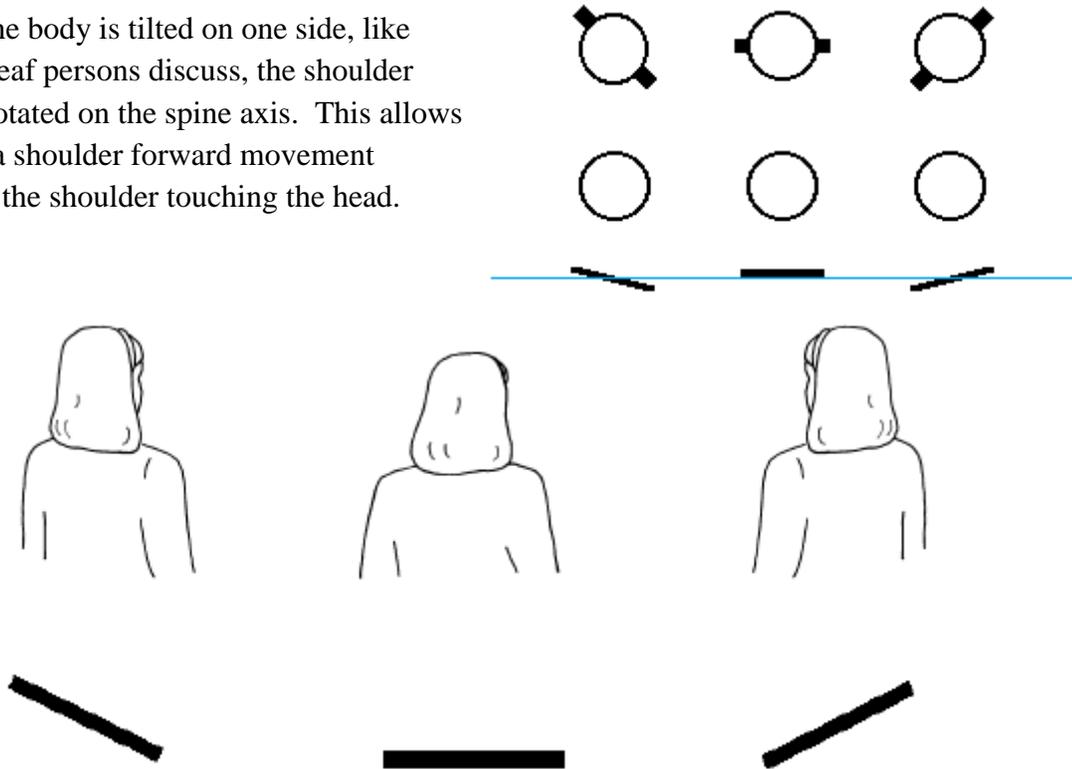


The up-down shoulder movement is distinct from a tilted body to the side and from a forward shoulder.



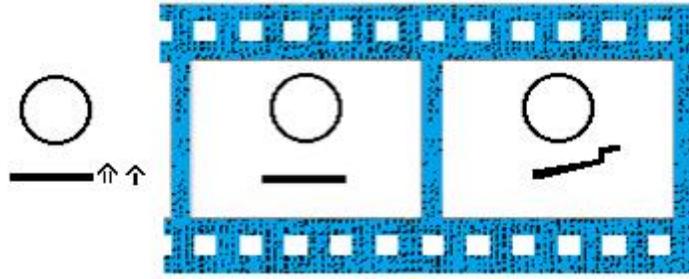
Tilted body and Forward Shoulder Combinations

When the body is tilted on one side, like when Deaf persons discuss, the shoulder line is rotated on the spine axis. This allows adding a shoulder forward movement without the shoulder touching the head.



Illustrations from Parkhurst, Dianne and Parkhurst, Stephen (2010) A Cross-Linguistic Guide to SignWriting®. A phonetic approach.

Right Shoulder Forward	Neutral position	Body Tilted Left	Body Tilted Left and Right Shoulder Forward
Right shoulder zoomed-out	Equal shoulders thickness	Equal shoulders thickness	Right shoulder zoomed-out
			



Shoulders Up and Forward Combinations			
Right shoulder up and forward.			Right shoulder up and backward.
Right shoulder down and forward.			Right shoulder down and backward.
Both shoulders up, right shoulder forward.			Both shoulders up, right shoulder backward.
Both shoulders down, right shoulder forward.			Both shoulders down, right shoulder backward.
Left shoulder up, right shoulder down and forward.			Left shoulder up, right shoulder down and backward.
Note: the symbols would look the same for left shoulder backward.		Note: the symbols would look the same for left shoulder forward.	
The difference is in the zoom of the whole symbol and its distance relatively to the head.		The difference is in the zoom of the whole symbol and its distance relatively to the head.	

Front of the body			Back of the body		
Face	Shoulder	Torso	Head	Spine	Back
*	*	*	*	*	*
The back and buttocks can be represented with the spine line or with arches like the back of the head.					
In SignWriting if the hip line is displayed, then the shoulder line must be displayed. In SignAnimating, if the head is displayed, the shoulder line is not required.					

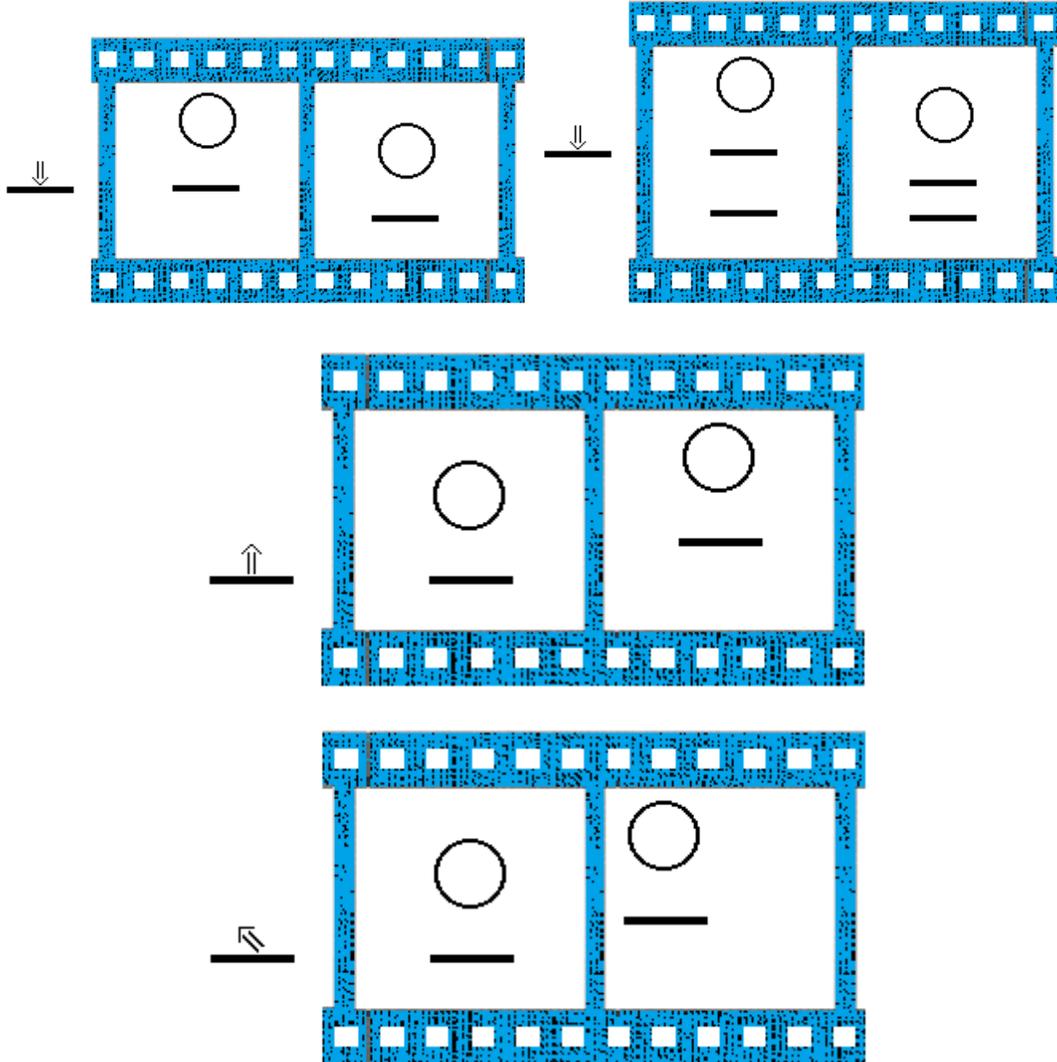
Torso

Unlike the upper body tilt, in the torso movement, the shoulder line moves while the hip line does not move. The movement has more amplitude than a shoulder movement. In SignAnimating, if needed, the hip line may be used to distinguish torso horizontal movement from shoulder horizontal movement.

Torso Curve Bend Wall	Torso Twist Floor Plane
Vertical Movement	Horizontal Movement

Torso Straight Stretch Wall

In the following example, the torso sinks down and the hip line remains still.



In SignAnimating, the Upper Body Tilt and Torso Shoulder Tilt are represented the same way. The hip line is optional.

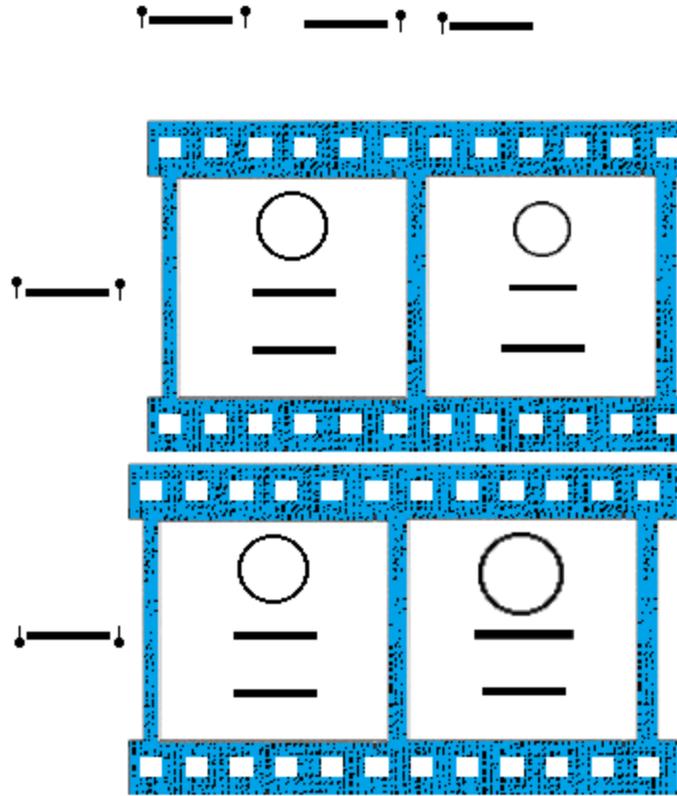
	Upper Body Tilt	Torso Shoulder Tilt
Shoulder and rib cage:	The tilt is from a straight spine from the hip.	The tilt is more internally disjointed. Only the ribcage and shoulders move, but not the lower body (like only a Classic Mime Artist like Marcel Marceau could do).
Spine:	It is true tilt from a locked spine.	The spine is not straight.
Hip:	The hip line is static.	The hip line is static.
Tilt:	It is a large tilts (for the entire upper body. That involves the entire spine, coming from the hip joint).	It is a very small and subtle tilt from high up on the torso.
<p>The movement may start toward the right or toward the left.</p>		

Torso Tilts (Shoulder Tilts from Waist)

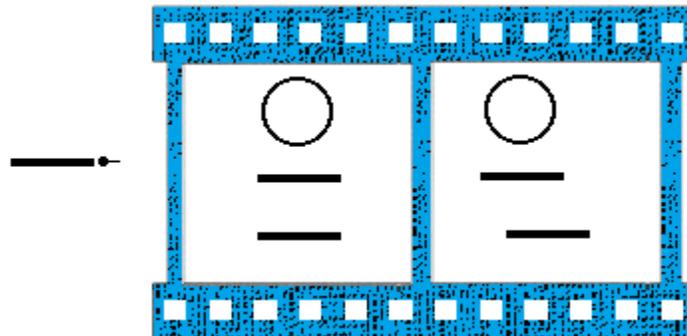


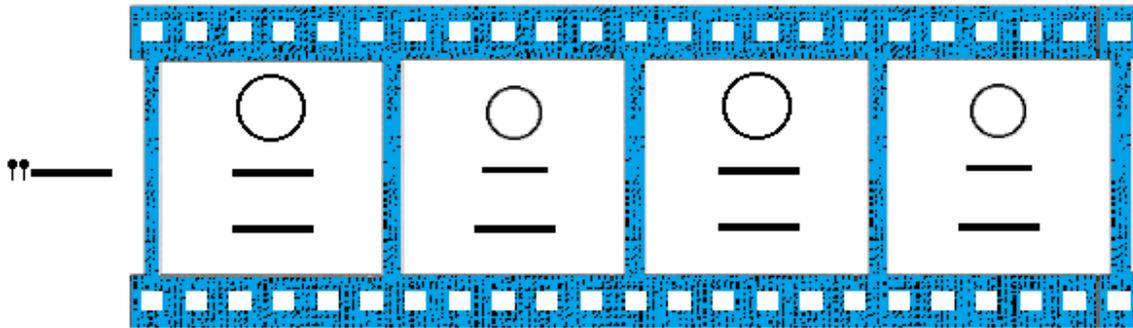
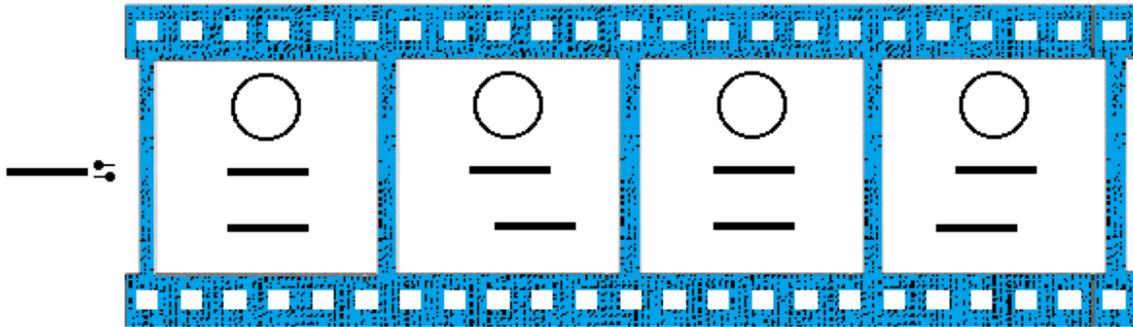
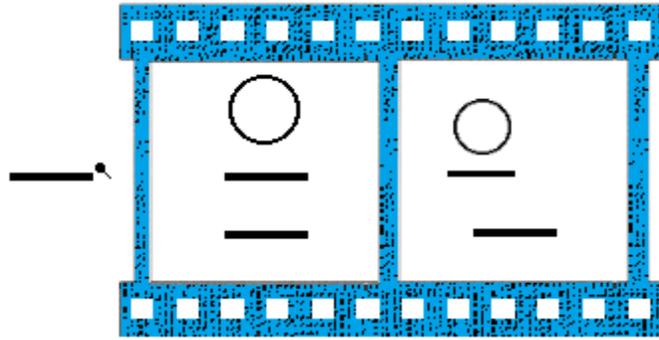
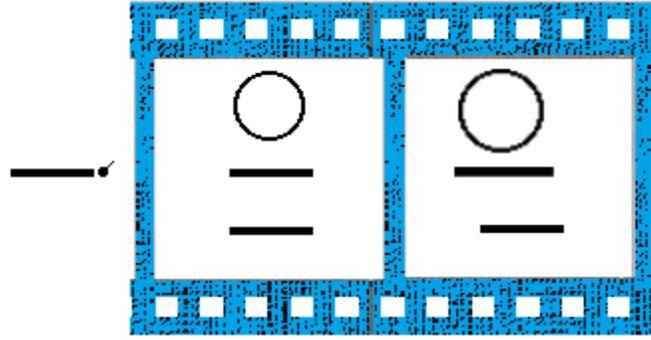
In SignAnimating, when the torso is tilted back, the shoulder line and the head are zoomed in. When the torso is tilted forward, the shoulder line and the head are zoomed out. The hip line, if displayed is not zoomed and it does not move.

The following symbols have the same meaning. They represent a small tilt, not a twist.



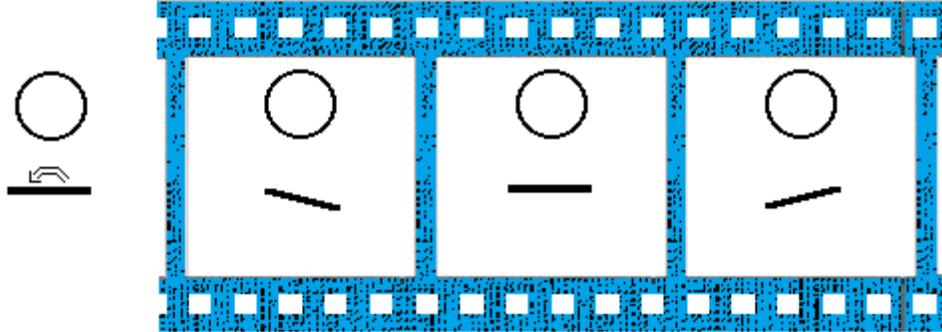
In SignAnimating, when the torso is tilted laterally, the shoulder line and the head are not zoomed. The hip line, if displayed, is not zoomed and it does not move.





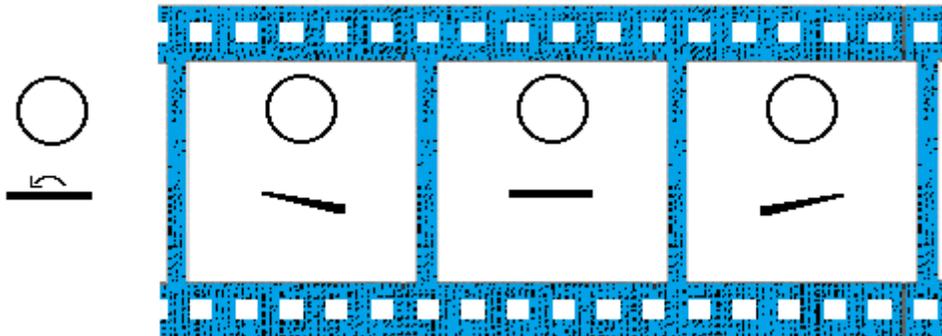
Torso Curve Bend Wall

The vertical movement does not zoom the shoulder line.



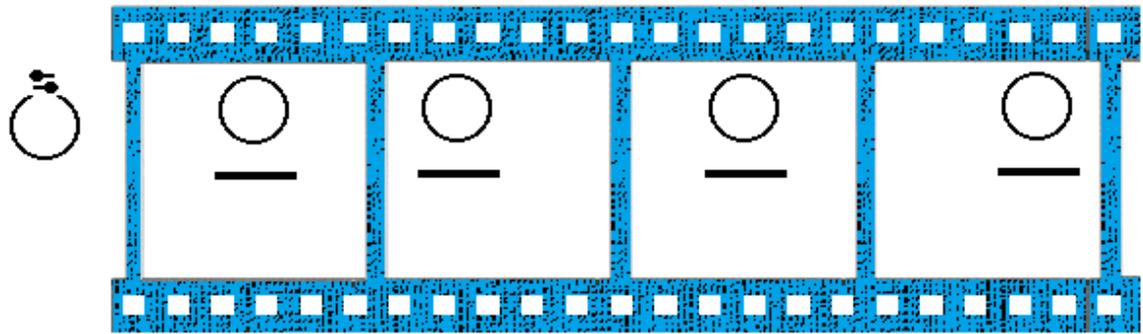
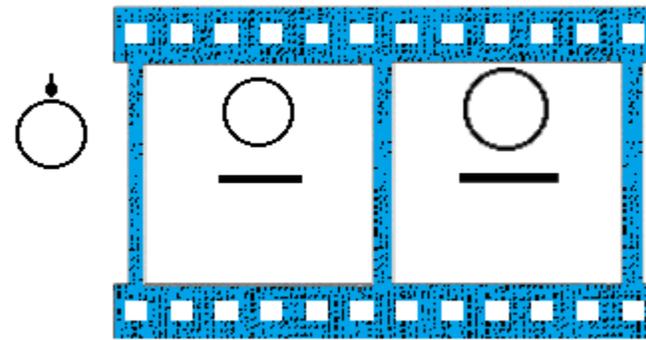
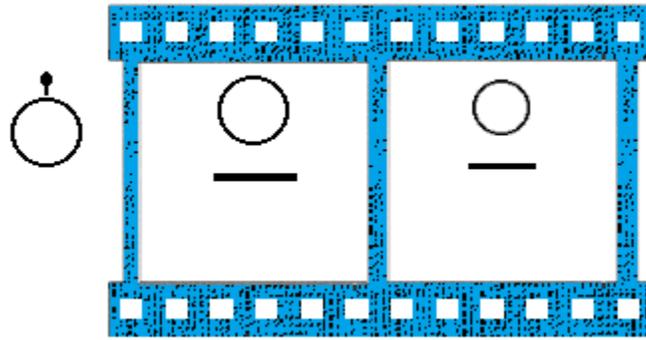
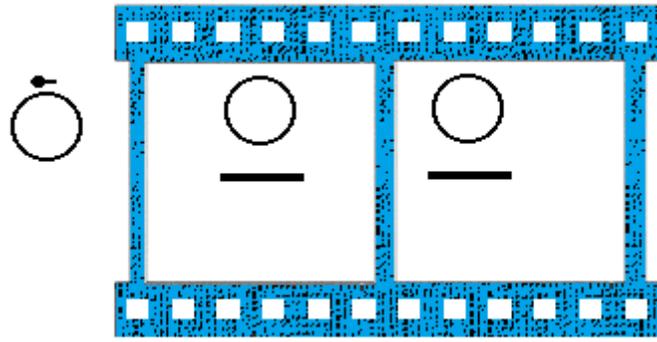
Torso Twist Floor Plane

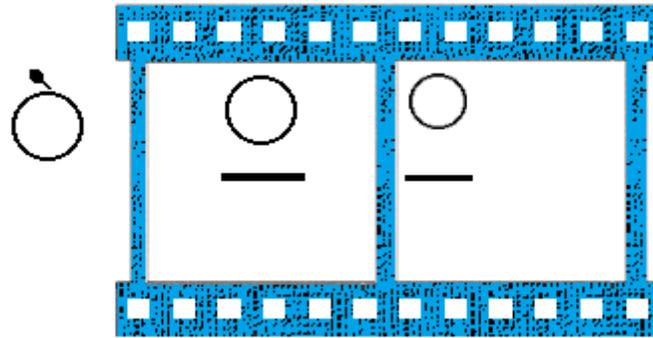
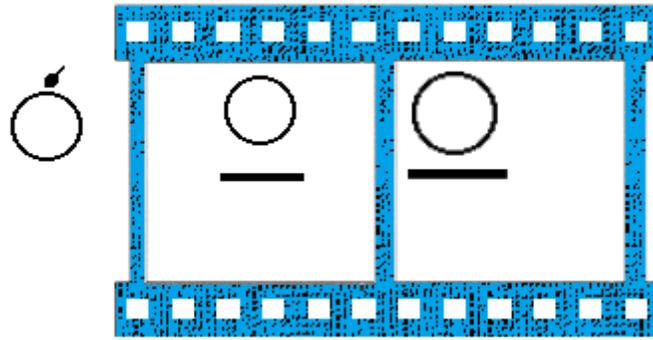
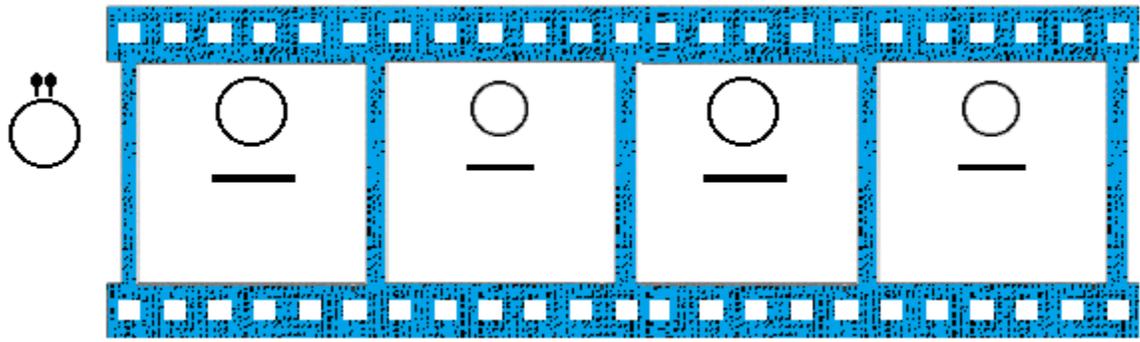
The horizontal movement zooms in the closest edge of the shoulder line or zooms out the furthest edge.



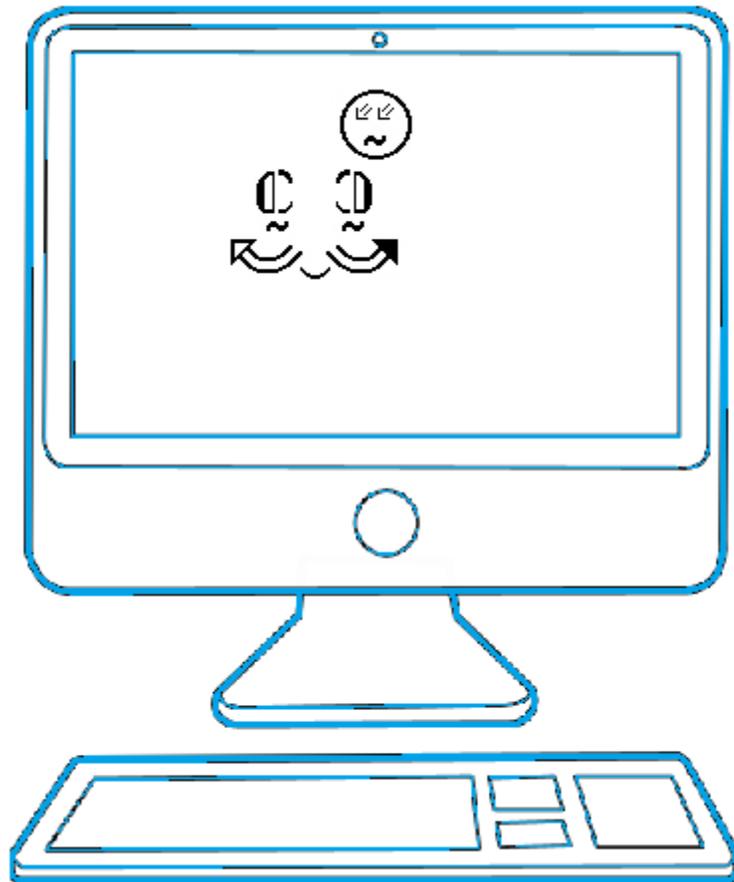
Upper Body tilt

 When the upper body tilt or rock back and forth; the neck and torso do not bend. They remain straight, moving in a unit from the hip joint. The upper body moves along the line orientation toward the dot. There is only horizontal displacement, no vertical displacement. In SignAnimating, the Upper body tilts are represented like the Torso tilts. The hip line, if displayed, is not zoomed and it does not move.





12. Dynamics



Movement Dynamics

Movement Dynamics are small symbols placed near movement arrows. They indicate movement that is fast, slow, smooth, tense, relaxed, simultaneous, alternating and un-even-alternating.

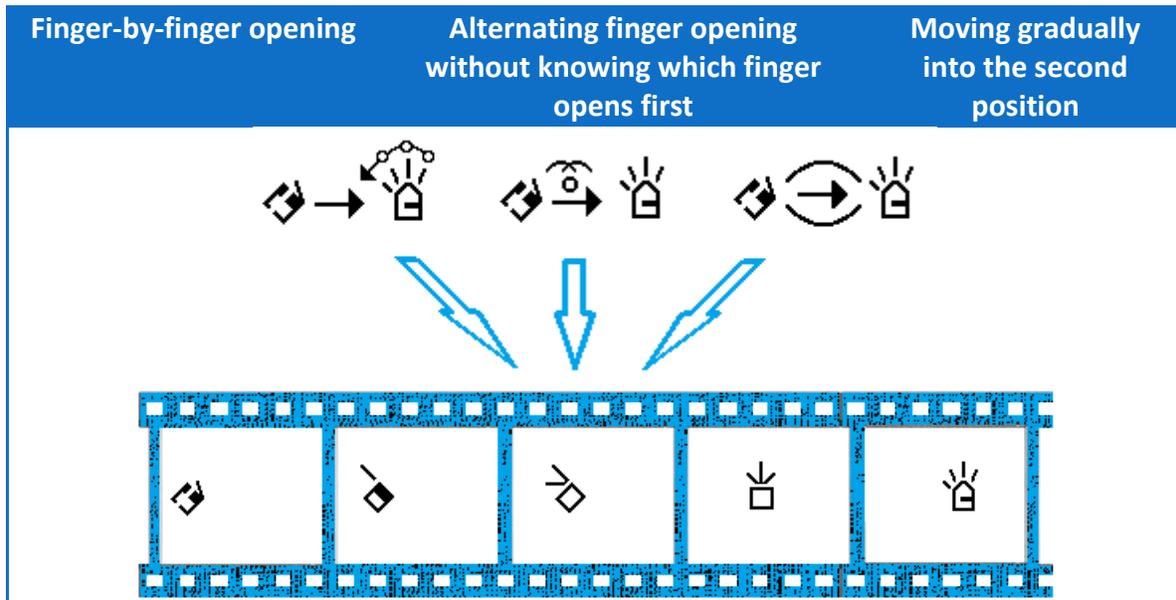


In SignAnimating, Fast movement symbol is represented by a faster frame rate or by greater displacements between frames. Slow movement symbol is represented by a slower frame rate or by smaller displacements between frames.

Fast-Fast movement symbol is also represented by a faster frame rate or by greater displacements between frames. In addition, if the speed is too high to be noticeable, the Fast-Fast Movement symbol may be added in the upper left corner while the animation does not go faster than the single Fast Movement symbol.

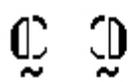
Dynamic Symbols Not Displayed		
⌒	<p>Simultaneous movements Both hands move at the same time.</p> <p>The symbol is also used to indicate which simultaneous movements are executed first.</p>	
⌞	<p>Alternating movements The right hand moves in one direction, while the left moves simultaneously in the opposite direction.</p>	
⌘	<p>Un-Even Alternating movements One hand moves while the other one is still.</p> <p>The right hand moves while the left remains still, then the left moves while the right remains still.</p>	
⌒	Slow movement	
⌒	Fast movement	
⊙	Progressive movement	

In the example below, several symbol sets represent the same sign. The hand moves toward the right as it points forward.



Dynamic Symbols Displayed	
	Smooth Movement
	Fast Movement with Emphasis (symbols points toward the center of the sign)
	Tense Movement
	Tense Movement with Emphasis
	Relaxed Movement
	Relaxed Movement with Emphasis

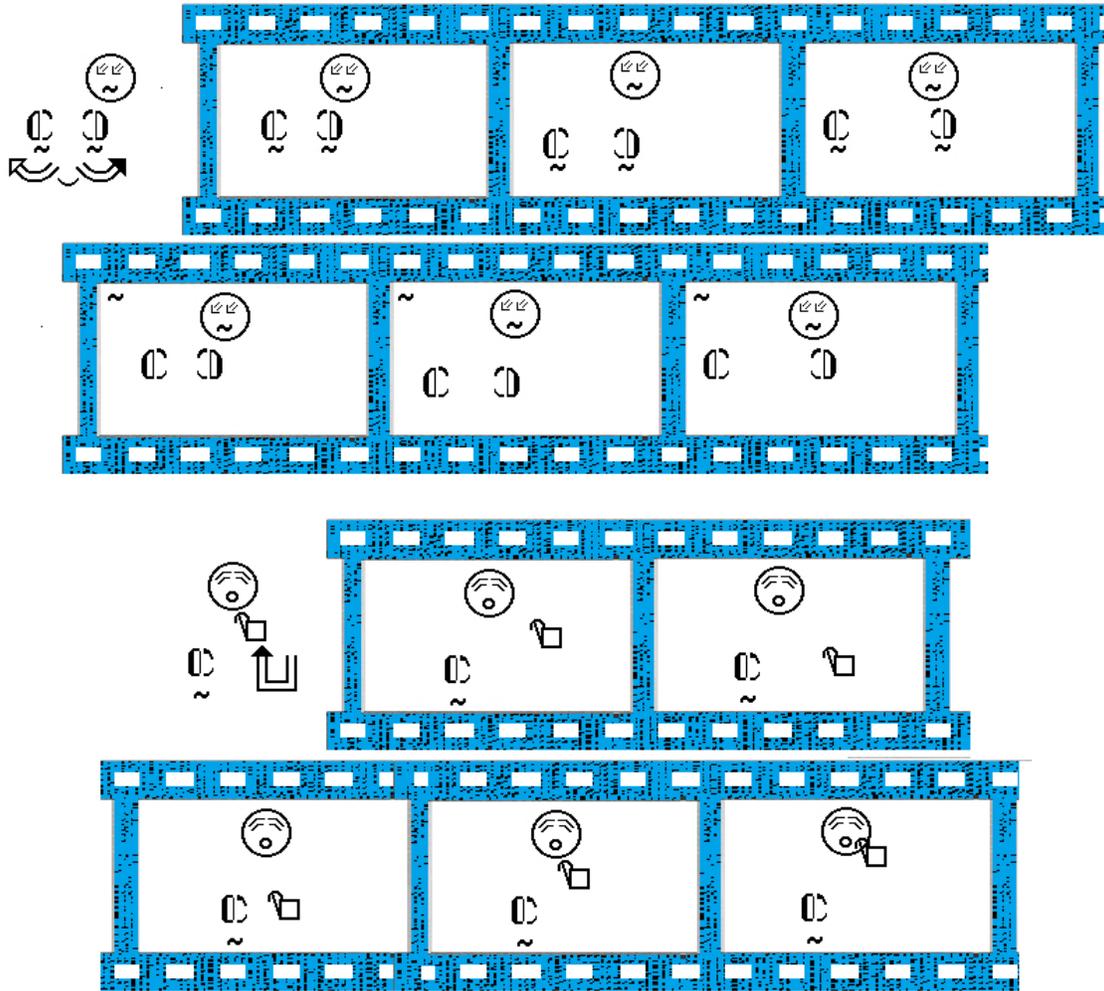
Hand Shape Dynamics Mark Classifiers



In SignWriting, they mark a hand that is held in one place for a long time. Classifiers are written with the hand shape plus a Classifier Marker. The Classifier Marker is a Tension Symbol.

It is always placed under or beside the hand shape. Once the classifier is established, one hand continues to mark the classifier, held in the same position, while the other hand does other signs. The Tension symbol remains under the hand that marks the classifier.

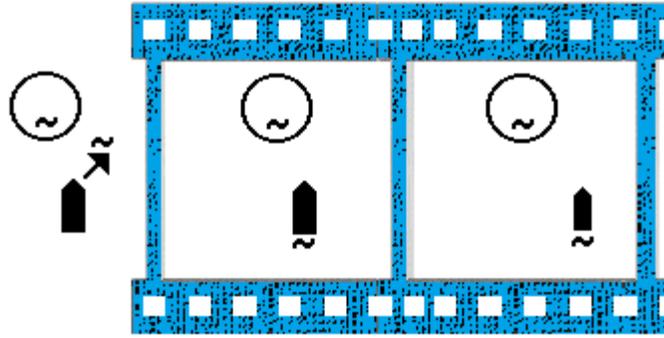
In SignAnimating, they are displayed when a feeling of tension is expressed. In SignAnimating, it is represented preferably under the hand classifier or in the upper left corner.



Facial Dynamics



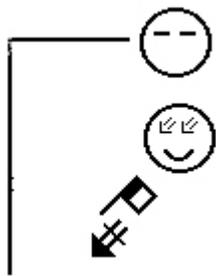
Facial Dynamics show tense or relaxed facial muscles. The Tense symbol is used for lips that press together, for raised cheeks, and for squeezed eyes. Facial expressions are essential to writing Sign Language stories and literature. They mark grammar and emphasis. The Tense Lips symbol shows the dynamic of the lips tensing as the hand is established in space by a classifier. Tension on the lips and near the hands are oftentimes written together. Facial Dynamics are used for both SignWriting and SignAnimating.



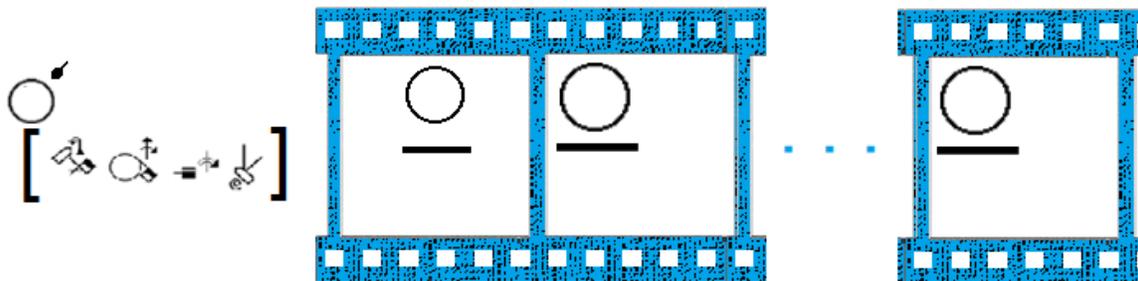
Punctuation Dynamics



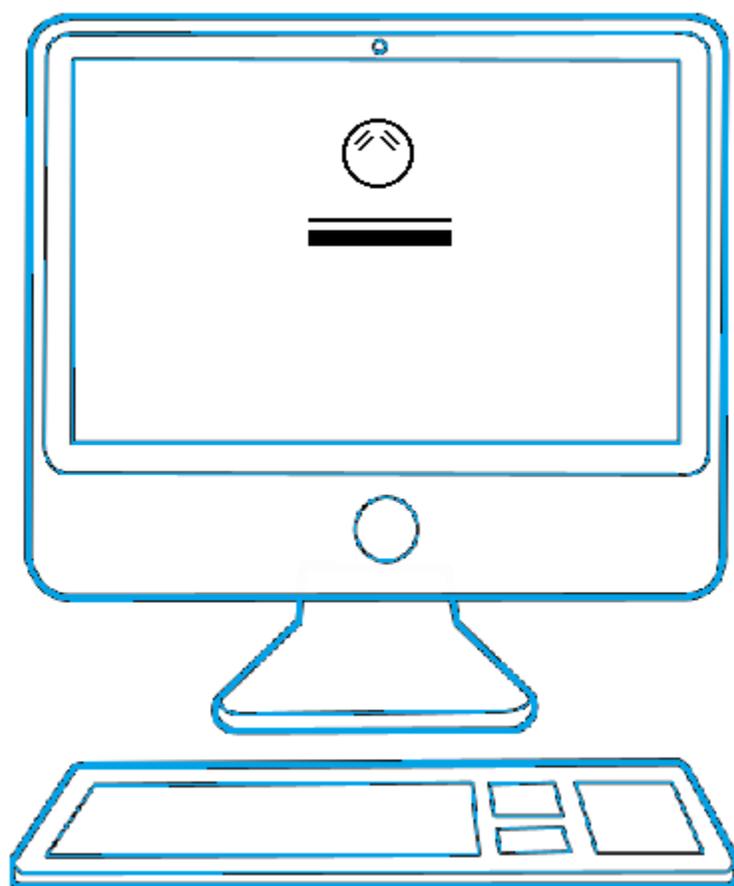
Unit Dynamics



Unit Dynamics mark the influence of one symbol on a whole group of signs. The Unit-Connecting Line is used to show one facial expression influencing several signs. In SignAnimating, the facial expressions are displayed in each sign they influence. The Unit-Connecting Line is not displayed.



13. Punctuation

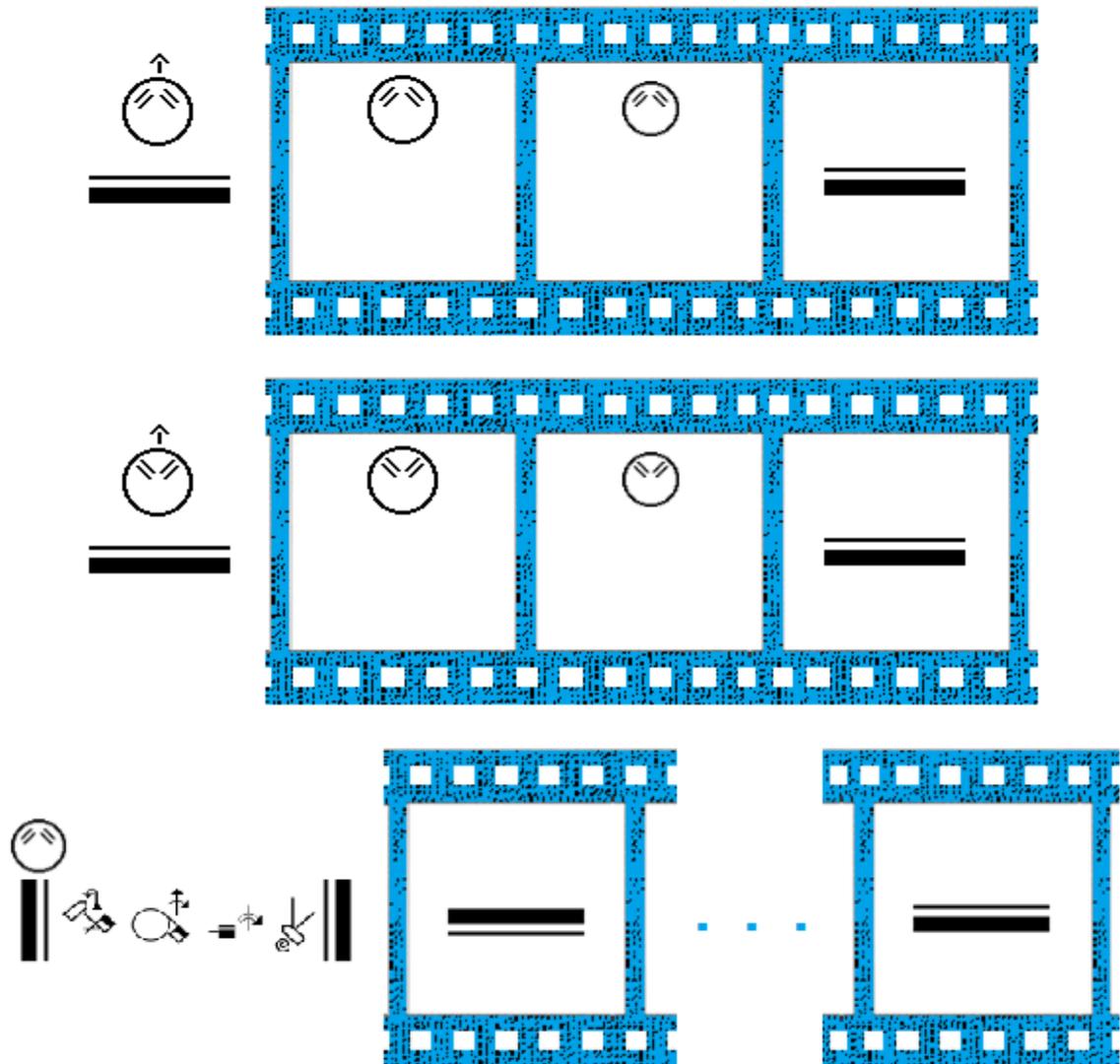


In SignAnimating, punctuation may be used to provide a visual structure to a long message. The punctuation symbols are usually horizontal and they divide text written in columns. If the convention in a country is to write in rows, then the punctuation is vertical. In SignAnimating, the punctuation follows the SignWriting convention of each country. The punctuation is displayed alone in the center of the frame. This avoids overlap of hand shapes and punctuation for wide signs.

SignWriting Punctuation		
	Pause (similar to a comma in English)	;
	End of sentence (similar to a period in English)	▪
	Pause before end of sentence (similar to a semi-colon in English)	▪ ;
	Pause before listing items (similar to a colon in English) This is used in the middle of a sentence, marking a new phrase that lists items 1, 2, 3, and so on.	▪ ▪
	Pause before a sub-phrase (similar to parenthesis in English) Marks a second thought inside a sentence, starting with the curved up symbol and ending in the curved down parentheses.	(
)
 	Questioning pause before end of phrase (similar to a question mark in English) When a sentence or phrase ends in a question, there is a slight pause at the end. The semi-colon symbol is used to write that pause at the end, but it must be combined with signs that write the grammatically necessary Facial Expressions and Head Movements that occur in sign languages when asking questions, including Head Forward and Eyebrows Up or Down.	?
 		?

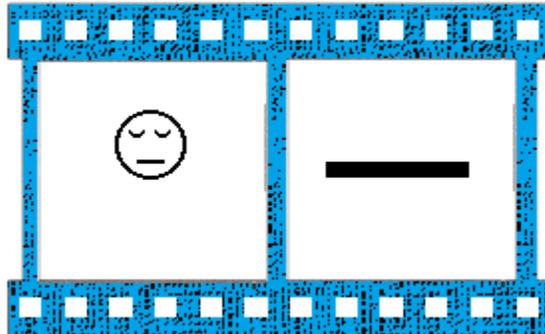
Questioning pause Before End of Phrase

It is similar to a question mark in English. When a sentence or phrase ends in a question, there is a slight pause at the end. The semi-colon symbol is used to write that pause at the end, but it must be combined with signs that write the grammatically necessary Facial Expressions and Head Movement that occur in sign languages when asking questions, including Head Forward and Eyebrows Up or Down. The questions sign may be placed also at the beginning of the question.



End of Sentence

At the end of a sentence, signers tend to blink and place hands in a neutral position. In SignAnimating, blinking help to visualize the text structure and provides a more complete message.



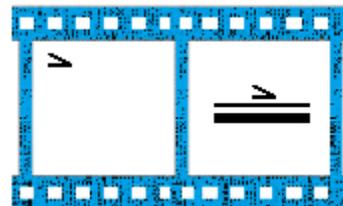
Punctuation Dynamics

Signwriting can add more feeling to sentences by adding Dynamics symbols to the punctuation.

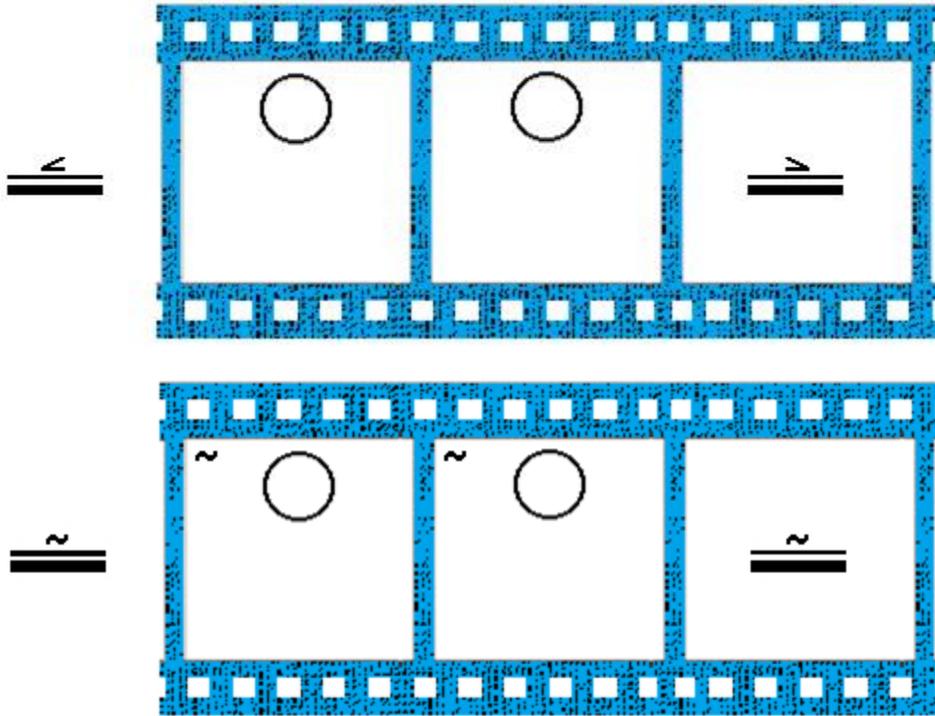
SignWriting Punctuation				
	<p>Fast symbol (similar to an exclamation point in English) The Fast symbol represents a sentence executed quickly, with speed.</p> 			
				
				
				

Slow, smooth, Tense and relaxed Dynamics symbols can also be placed near Punctuation Symbols to give the feeling of slow, smooth, tense or relaxed sentences.

In SignAnimating, the Dynamic symbol may be displayed during the sentence and above the Punctuation. In the example, the preceding frames were displayed faster and the punctuation with a dynamic symbol is displayed at the end.



The fast symbol is oriented toward the right because that when it is displayed in the top left corner it also points toward the right, where is the sign center. Slow symbol is not necessary before the punctuation is displayed, the frame rate itself is slower, or tiny movements are represented during several frames. Smooth, Tense and Relaxed symbols are displayed when signs are affected and on the punctuation.



Bibliography

Documents can be downloaded for free at:

- <http://www.signwriting.org/archive/docs2/sw0116-Lessons-SignWriting.pdf>
- <http://www.signwriting.org/lessons/books/>
- <http://www.signwriting.org/lessons/web/>
- <http://www.signwriting.org/lessons/elessons/>
- <http://www.signwriting.org/archive/docs5/sw0493-SWLessonsBook-Parkhurst-EngLSE.pdf>
- <http://www.signwriting.org/lessons/iswa/>

About SignWriting, this guide is entirely based on the textbook of Valerie Sutton in:

- Sutton, Valerie (2014) Lessons in SignWriting. Text book. Center for Sutton Movement Writing, Inc. La Jolla, California. USA. Available for free online.
- Sutton, Valerie. SignWriting e-lessons.
- Sutton, Valerie and Frost, Adam (2010) SignWriting Reference Manual 2. SignWriting Hand Symbols, ISWA 2010 by Valerie Sutton. Available for free online.
- Parkhurst, Dianne and Parkhurst, Stephen (2010) A Cross-Linguistic Guide to SignWriting®. A phonetic approach.
- Frost, Adam (2010) ISWA 2010 Symbol. Lessons Online Web lessons show moving hand shapes with symbols.

Leçons en français pour apprendre à écrire les signes:

Sutton, Valerie (2002) Leçons en SignWriting... lire et écrire les mouvements des langues des signes. Les langues des signes sont des langues écrites. Center for Sutton Movement Writing, Inc. La Jolla, California. USA. Disponible en téléchargement gratuit:

- <http://www.signwriting.org/archive/docs3/sw0221-Lecons-SW-Francais-1.pdf>
- <http://www.signwriting.org/archive/docs3/sw0222-Lecons-SW-Francais-2.pdf>
- <http://www.signwriting.org/archive/docs3/sw0223-Lecons-SW-Francais-3.pdf>
- <http://www.signwriting.org/archive/docs3/sw0224-Lecons-SW-Francais-4.pdf>

About SpeechWriting:

Documents can be downloaded for free at:

- <http://www.signwriting.org/symposium/presentation0002.html>
- <http://www.gebaerdenschrift.de/>
- http://www.gebaerdenschrift.de/read/Mundbilder/uebersicht_mundbilder.htm.

Wöhrmann, Stefan (2014) Wöhrmann's SpeechWriting, in SignWriting Documents, Teaches Deaf Students Spoken Language.

Additional readings about SpeechWriting:

Even for a non-German reader, the information is clear and the phonetic notation may be used in other languages.

Refer to the work of Stefan Wöhrmann, at <http://www.gebaerdenschrift.de/> and “Übersicht über die in der Mundschrift verwendeten Symbole (Stand Februar 2002)” at http://www.gebaerdenschrift.de/read/Mundbilder/uebersicht_mundbilder.htm.

Stefan Wöhrmann SpeechWriting symbol set is presented for German in:

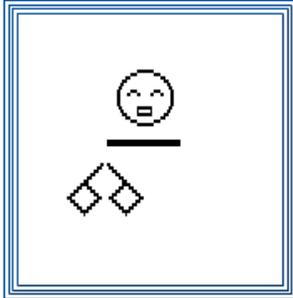
“Übersicht der Mundbild-Symbole in der GebärdenSchrift (Stand Juni 2012)”

Also, a conversion table toward phonetic was published:

Stefan Wöhrmann (2007) “Die Mundbilder in der GebärdenSchrift” and “Die Mundbildschrift” in Jacobsen, Birgit. Das Gebärdenbuch Band 2. Pages 181-192. Hamburg, Germany.

Animations:

We suggest visiting the animation web page: <http://movementwriting.org/animation/sgn-DE/> . It displays a welcome message in German Sign Language.



“A wonderful animation is on the opening page of the German SignWriting web site, designed and animated by Stefan Wöhrmann, a teacher of Deaf children in Osnabruck:

<http://www.gebaerdenschrift.de>

Historically, this is the first animation of a full SignWriting sentence. For those who know how to sign, it looks as if someone is standing in front of you, signing! You can follow along and sign with the animation. Spoken languages cannot be animated in the same way that SignWriting can. Animated sentences hold the potential of teaching deaf children to read full sentences sooner, and with better understanding.”

Several other animations are available at: <http://www.movementwriting.org/animation/>