

1989

One, Two, Buckle Your Shoe: Numbering Systems in ASL

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ONE, TWO, BUCKLE YOUR SHOE

Numbering Systems in ASL

WORKBOOK



BY

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One, Two, Buckle Your Shoe

Numbering Systems in ASL

WORKBOOK

Janice Humphrey

DVD

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ABOUT THE AUTHORS

JAN HUMPHREY had the rich and life changing experience of meeting **Bob Alcorn** in 1981. Initially they were colleagues but quickly became friends and business partners, working together in Texas and Kansas. When events forced them to live in different parts of North America, they maintained their close bond and working relationship until Bob passed away in 1994.

Together, they wrote articles, produced and edited instructional videos, taught classes and workshops, conducted ethnographic research and completed advanced degrees (Bob with an M. Ed. and Jan with an M. Ed. and an Ed. D.).

Jan taught and coordinated interpreter training programs in Kansas, California and British Columbia before moving to Seattle, WA where the challenges of video relay interpreting caused her to dust off the original *One, Two, Buckle Your Shoe*, and develop this workbook to support those trying to master ASL numbering systems.

ABOUT THE PUBLISHER

The video *One, Two, Buckle Your Shoe* was originally produced by ISSLI, a small business owned by Bob and Jan, based in Austin, Texas. It was later picked up and the copyright transferred to H&H Publishing Co., now incorporated and based in Seattle, WA.

INTRODUCTION

The content in this workbook and accompanying DVD is based on ethnographic research conducted by Bob Alcorn and Jan Humphrey from 1982 - 1989 primarily in Texas, Oklahoma, Kansas, Iowa, Nebraska, Maryland, Washington D.C. and California. The research was initiated after discussions with Betty Colonomos and MJ Bienvenu regarding their observations of the relative complexity of teaching, learning and accurately using number-related information in American Sign Language (ASL).

Bob and Jan observed how numbers were used in both formal and informal settings, had extended discussions with other professionals in the fields of ASL instruction and interpretation, as well as some sociolinguists and other ethnographers. Their observations and conclusions are summarized in these materials, focusing on 12 different numbering systems in ASL.

ASL students, new and seasoned interpreters, as well as family members of deaf and hard of hearing individuals can use the video and workbook to learn important distinctions in how deaf and hard of hearing people sign numbers. This includes finite differences in palm orientation, location, and movement in certain sets or groupings of numbers. Following an explanation of each numbering system, the on screen instructor provides some brief examples in which you will see the numbering system(s) applied and demonstrated. All of these examples have been edited together in the final chapter of the DVD version of this material, making them a bit easier to access.

USING THESE MATERIALS

Using words to describe signs is always a challenge so the author urges you to watch the DVD for each numbering system before reading the accompanying material. After seeing the explanation in ASL (and hearing the voiced interpretation if you want), it will be much easier to understand what the workbook is trying to describe for you.

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GETTING STARTED



NUMBERS IN ENGLISH

When using English, you will find there are only two categories of numbers: cardinal and ordinal.

Cardinal numbers are used to denote counting or quantity:

134	5,490,180	3 x 5	4
34,790	43	97,000	329
713	3	85	72

You say or write the same number form for anything being counted or quantified - dogs, money, minutes, inches, etc.

34,790 miles	43 minutes	\$3.29	5,490,180 students
713 stores	3 o'clock	85 inches	72 months
97,000 callers	134 dogs	3 x 5 meters	4 children

Ordinal numbers show the relative position of something or somebody in a sequence: 1st, 16th, 32nd, 893rd, etc. Like cardinal numbers, you say/write the same number form no matter what relative position you are referring to:

32nd time to visit Mexico	1,000,000th customer
3rd person in a parade	1st place in the tournament

NUMBERS IN ASL



Unlike English, ASL has multiple sets of numbers. Movement, hand, shape, location and/or palm orientation helps the person viewing the signs determine what is being counted or referred to in terms of relative position or sequence. These distinctions have evolved over time to enhance visual clarity and to reduce physical strain on the signer. Some of these numbering systems reflect cultural values

- sports signs for example. As well, expressing numbers according to the correct system provides a type of reiteration, clarifying and reinforcing the information visually.

In the accompanying DVD, we will teach you 12 of the most commonly used numbering systems. The first two, *informational numbers* and *counting numbers*, are particularly significant as they form the foundation upon which the other numbering systems are built.

INFORMATIONAL NUMBERS

When answering a question or giving specific information, you use informational numbers. Examples of this include giving your telephone number, your social security number or address. This set of numbers requires that the palm be facing out for numbers 1-9, the speed of execution is usually slow and deliberate and the arm is slightly extended. Further, additional visual markers are often used - signing the parentheses around the area code, for example, or the dash between sets of numbers on your passport.

This numbering system is also used when clarifying or correcting information. If, for example, the signer has used a *people height number* to tell someone how tall they are and the listener is not able to understand "5'4" after being signed a couple of times, the signer is likely to slow down the speed, extend the arm, and sign "5 (with palm out) ft. 4 (with palm out) in." thereby shifting from *people height number* rules to *informational numbering* rules.

CAUTION: When you ask a Deaf person how to sign a particular number in ASL, they will usually answer with an *informational number* because they are responding to a question. This is why you may not have learned or been aware of many of the numbering systems we will be introducing in these materials.

GENERAL RULES: Informational Numbers

Location	Palm Orientation	Movement/Speed	Discourse Marker
Arm slightly extended	Away from signer/toward person reading signs	Unmarked, slow, deliberate	Often added for clarity (e.g. space markers)

**Exception: 10-19 combinations follow formal counting number format.*

COUNTING NUMBERS

COUNTING NUMBERS 1 – 15

When conveying information regarding how many people or things are in a group, you can use *counting numbers* in ASL. Counting numbers are the foundation for numbers in ASL so learning the norms of this number system is critical. The most distinguishable feature of this number set is the palm orientation for numbers 1-5. Watch deaf signers as they say such things as

- ◆ I have 3 children.
- ◆ There are 4 books on the table.
- ◆ I am working 2 jobs.



You will see that the numbers are executed with the palm facing the signer rather than facing the person being addressed.

Further, when executing numbers 6-9, there is typically a very slight bounce or tapping of the tips of the fingers. If you are not familiar with this rule, you may be unsure if the signer is conveying the number 6, 7, 8, 9 or if they are saying 66, 77, 88, or 99. There is clear visual distinction. In executing the numbers 6, 7, 8, and 9 there is no movement from left to right as the number is being produced; such movement would change the number to 66, 77, 88, or 99.

GENERAL RULES: Counting Numbers 1 - 15

	Palm Orientation	Location	Movement
1 - 5	Facing signer	Mid signing space	Unmarked
6 - 10	Out, away from signer		6-9: slight bounce or tapping on finger tips
11 - 15	Facing signer		COMMON: Double movement UNCOMMON: wiggle

One feature of counting numbers is that they can be articulated in ways to incorporate space. In other words, if you are counting the number of children in a room, you might want to execute the numbers on space near where the children are actually sitting/standing.

COUNTING NUMBERS 16 – 19

Counting numbers 16 - 19 are sometimes challenging for language learners because there are 4 common forms you might encounter. The “formal” formation is used in formal setting and for *year numbers* (e.g. 1776, 1860, 1995). This formation is also the one that you are most likely to see in sign language books and to be taught in sign language classes. The other 3 forms can be used interchangeably.

Regardless of which form you use when signing 16-19, it is important to realize that these four double digit numbers each have two parts - (a) the hand shape forming the number and (b) movement. The shape of 6, 7, 8, 9 portion of each number requires that the tip of the thumb and finger cross rather than touching at the tips. This differentiates them from the smaller, single digit numbers of 6, 7, 8, or 9. This visual distinction is critical and is particularly helpful for the person reading the signs to distinguish between 6 and 16, 7 and 17, 8 and 18, 9 and 19.

GENERAL RULES: Counting Numbers 16 - 19

	Hand Shape	Movement/Palm Orientation
Formal	10 plus number; tip of thumb/finger cross at contact point	Palm "in" as "10" is formed: palm "out" as 6, 7, 8, or 9 is formed
Used for formal register and to form year numbers.		
A+ #	A plus number; tip of thumb/finger cross at contact point	Palm is "out" as signer forms A and the number 6, 7, 8, or 9
#slide	Only the number is formed; tip of thumb/finger cross at contact point	Palm is "out" as signer forms the number 6, 7, 8, or 9 and slides the finger up and down the side of the thumb at contact
#twist	Only the number is formed; tip of thumb/finger cross at contact point (least frequently observed)	Palm is "out" a signer forms the number 6, 7, 8, or 9 and twists the wrist twice while holding the number

To date, we have found no evidence that one form of the 16 - 19 numbers is used by particular age groups, genders, or geographical residents. Rather, personal preference and comfort drive the selection of one formation over the other. The one rule we have noticed is that A+#, #slide and #twist **CANNOT** be used to form year numbers in which the year begins with 16 - 19.

COUNTING NUMBERS: 20 - 29

Hand shapes used when forming numbers 20 - 29 are quite unique. Whereas the number 2 is generally represented with a 2 or V-hand shape, the only place you will see this hand shape in *counting numbers* 20 - 29 is the number "22" which is made with palm orientation "down", as are all other double numbers in this system. In all the other 20-numbers, the hand shape used is an L-hand shape. In addition, some of the numbers between 20 - 29 have unique movement rules. The movement supports visual repetition, helping the person reading the signs and comprehend the number being presented.

GENERAL RULES: Counting Numbers 20 - 29

	Hand Shape	Palm Orientation	Movement
20	Closed-L	Away from signer	Double-triple
21	L-I	Toward signer	Multiple wiggle thumb
23, 25	L-#	Away from signer	Multiple wiggle middle finger
24	L-#	Away from signer	Double-triple
26 - 29	L-# (touching tip no cross at contact)	Away from signer	Single movement unless emphasized

Please note that the counting number rules for 20 - 29 are sometimes ignored when a person is providing his/her telephone number, address, or similar information - because the signer has shifted into *informational numbers*. However, fluent users of ASL frequently present these numbers incorporating the *counting number* rules outlined above. The variation depends on signer preference.



COUNTING NUMBERS: Double Numbers

When producing double numbers - 22, 44, 99, etc. the palm orientation is down toward the floor. This is modified when producing double numbers in formal settings (business meetings, etc.) and often when communication in sign language via video phones and web cams. In these settings, the palm orientation is likely to be away from the signer for visual clarity.

COUNTING NUMBERS: Tens

When conveying numbers that end in zero (30 - 90), there is a slight hold on the first number, followed by a double or repeated movement. When forming the zero, you hold the contact point of the first number. For example, when signing the number 60, form the number 6, palm away from the signer and hold for a second before dropping the remaining fingers to form the zero; then repeating 6-0

one or two times. When signing the number **40**, the fingers drop to the thumb to form the “zero”, looking like the letter “E”.

COUNTING NUMBERS: Sixty-Seven to Ninety-Eight

Many second language learners struggle to decipher the numbers 6, 7, 8, and 9. Their eyes just can't see the different formations quickly. ASL has added certain movements to assist with this issue. Remember that when signing 6-9, there is a slight bounce or tapping of the fingertips at contact. When signing 16 - 19, there is a crossing of the tip of the thumb and the tip of the number finger.

When signing 67 - 98 there is a slight side-to-side movement intended to help the eye and the brain process these numbers more easily. The rule here is that when the first number of the set is smaller than the second number, there is a slight movement toward center signing space as the 2nd number is executed. However, when the first number is larger than the 2nd number, there is a slight movement away from center signing space as the 2nd number is executed.

In other words, for the number 67, the 6 is formed with a slight twist away from center signing space and the 7 is formed after a slight movement toward center signing space. The opposite would be true for 76 because the first number is larger than the second number.

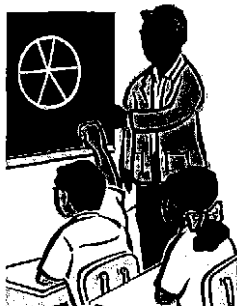
The direction of the movement will depend on which hand the signer is using . If the signer is right handed, the movement away would be to the right. If the signer is left handed, the movement away from center would be to the left. Study the model on the DVD (who is left handed, by the way) and practice these numbers carefully.

GENERAL RULES: Remaining Numbers			
	Hand Shape	Palm Orientation	Movement
Doubles	Number → zero while maintaining number contact point	Palm down (except in formal and video)	Left-to-right

GENERAL RULES: Remaining Numbers			
	Hand Shape	Palm Orientation	Movement
Tens (30-90)	1st number hold slightly	Away from signer	Repeated movement
67 - 98	If the 1st number is smaller than the 2nd number	Away from signer	Toward center as 2nd number is executed
	If the 1st number is larger than the 2nd number.		Away from center as 2nd number is executed.
Thousands	In English, you often hear numbers in the thousands referred to as "eighteen hundred" or "fifty-seven hundred". PLEASE NOTE that in ASL, these numbers are always signed as so many thousands, and so many hundreds...1,800...5,700... NOT as 18-hundred.		

COUNTING NUMBERS: Fractions

Fractions are signed with a downward movement reflecting the written fraction. One-half is formed by signing 1, then dropping the hand down and signing the number 2. The second number is produced "under" the first number. If the fraction being formed is NOT accompanied by a whole number, the palm orientation of the fraction will follow the counting number rule for the first number in the fraction. For example, $1/2$ or $3/4$ will be executed with the palm orientation facing the signer. If the fraction being signed is $7/16$ or $9/10$, the palm orientation will be outward, facing the person reading the signs.



When the fraction is accompanied by a whole number, the rules of this numbering system stipulate that the palm orientation is determined by the preceding whole number. If, for example, you are signing "3 $1/2$ ", the palm orientation of counting number "3" is toward the signer. Therefore, the numbers forming the fraction $1/2$ will also be made with the palm

facing the signer. However, if the number being produced is $8\frac{3}{4}$, the palm orientation for 8 in counting number rules is palm out, facing the person reading the signs. As a result, the numbers forming the fraction will be made with palm out.

TRY IT OUT



You've been introduced to informational numbers and counting numbers. Let's see how you do with them. Sign the following sentences/concepts using the proper numbering systems and applying the rules as outlined above. Note which type of number and any specific guidelines for executing the numbers called for.

- ◆ I live $5\frac{1}{2}$ miles from the airport and $14\frac{3}{4}$ miles from work. There are twenty-three hundred people in our town so the commute isn't too bad.
- ◆ My sister has 4 children and 25 grandchildren. I have only 1 child and no grandchildren to date.
- ◆ My telephone number is 829-999-1738 and I live at 1207 Dexter Ave.
- ◆ I live 45 miles from here. I have 3 children, $7\frac{1}{2}$ grandchildren, 2 dogs, a cat, and 9 fish! My brother has 5 children and 17 grandchildren!
- ◆ There are twelve-hundred interpreters in our state. Twenty-eight interpreters work here in our agency -- 13 of whom are native to Colorado, 7 hail from Alaska, 6 from Maryland and 2 from Arkansas.
- ◆ There are 67 people signed up for the cruise so far. If we get 98, there will be a price break for all of us.
- ◆ The speed limit of highways is 55 mph in most states but I heard it is 70 mph in Nevada.

- ◆ The number on his passport is VE712 Q839 MH456. His driver's license number is 90823-512.
- ◆ The number for the restaurant is 736-193-7592. They have a very extensive menu - over 200 items. At the same time, it is fairly intimate, seating only 98 people.



ORDINAL NUMBERS

When conveying information regarding the order or sequence of people, things or events, you use ordinal numbers in both English and ASL. English uses several suffixes to change a number from cardinal to ordinal. For example, “st” follows a 1, changing it to 1st; “nd” follows a 2, changing it to 2nd; “rd” follows a 3, changing it to 3rd; and “th” follows a 4 changing it to 4th, and so forth, marking all ordinals in the same way regardless of what order or sequence is being referred to.

Unlike English, ASL ordinal numbers are comprised of several numbering subsets, each with its own movement, palm orientation, location and “rules”. The selection of ordinal subset depends on what kind of information is being conveyed: sequential, ranking, multiple events, or listing of information.

A common form used in ASL when conveying information about a sequence, requires the signer to begin the number 1 - 9 with the palm away from the signer then twist the number inward, toward the signer. This constitutes 1st - 9th. No addition of a suffix is required. However, for numbers 10 and above, the signer must add “th” to the counting number form - regardless of what the number is. Thus the signer would say, “This is the 33rd book I have written by forming 33-th to convey the ordinal concept

This set of ordinal numbers 1 - 9 can be signed in neutral mid-space or in the relative position of the individuals, events, or things being referred to, providing visual duplication. For example, if you were telling the 4 children above the order in which they gave their an-

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swer in class, you would sign the ASL sequential ordinal "1st, 2nd, 3rd, 4th" in the relative location of each child (as the illustration above demonstrates).

The ordinal subset form used to indicate the days of the month (1-9) looks similar to that above. However, there is a slight shaking or double twist movement of the when indicating a date numbered 1-9.

GENERAL RULES: Ordinal Numbers				
	Hand Shape	Palm Orientation	Movement	Location
<u>Order or Sequence</u> 1 - 9	# pre-formed	Out to in	Twist	Mid-space of relative position to referent
			Can incorporate space	
<u>Order or Sequence</u> 10 & above	# plus "th"	Facing signer	<i>Counting</i> # form plus "th"	Mid-space
<u>Days of the month</u> 1 - 9	#pre-formed/no cross tips	Sideways	Slight shake	Mid-space
<u>Days of the month</u> 10 & above	Follows <i>counting number</i> rules	Follows <i>counting number</i> rules	Number repeated 2-3 times	Mid-space
<u>Ranking</u> 1 - 9	# pre-formed	Facing signer	Slide toward dominant side	Mid-space
<u>Ranking</u> 10 & above	# + "th"	Facing signer	<i>Counting</i> # form plus "th"	Mid-space
<u>Multiple Events</u> 1 - 4	Dominant # pre-formed	Non-dominant flat palm up; Dominant palm face signer	Strike tip of # on non-dominant open palm	Mid-space

GENERAL RULES: Ordinal Numbers				
	Hand Shape	Palm Orientation	Movement	Location
Multiple Events 5 & above	Follow <i>counting</i> # rules	Follow <i>counting</i> # rules	Number plus "time"	Mid-space
Listing Non-Dominant Hand 1 - 9	Non-Dominant thumb up initially; Dominant hand index finger extended	Facing signer	Dominant hand index touching the tip of thumb, index, middle finger, etc. to indicate 1st - 9th (some signers make a slight twist with the Dominant hand index at point of contact)	

A common feature in ASL is the use of lists to convey points in a presentation or the sequence of events. On the following page, you will see the rules related to one of the most common listing forms - which is an *ordinal numbers* subset.

Second language learners often ask how to indicate 4th and 5th if starting with the thumb as 1st. Here's how that works. The thumb is "1st", index finger is "2nd", and the middle finger is "3rd" - and the non-dominant hand is now formed into a 3-shape with palm facing the signer. The hand shape now changes into a 4-hand shape and the little finger represents "4th". If the concept "5th" is required, the thumb is raised on the non-dominant hand, changing the hand shape from 4 to 5 and the little finger is indexed again, but this time it represents "5th".

TRY IT OUT

Try signing the following sentences/ concepts using the proper ordinal number representation.



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SENTENCE	GUIDELINES
This is my 1st marriage; John's 4th.	In this example, 1st can be signed using either the listing form or the order/sequence form.
ASL III begins May 7th.	Note that ASL III refers to the 3rd level and should therefore be signed as an ordinal number, not as a counting number.
This is the 21st annual softball tournament; 32 teams signed up for the tournament; our team is in 1st place after 9 games. I play 2nd base.	This has a combination of <i>counting numbers</i> and <i>ordinal numbers</i> . Be sure you are selecting the correct numbering system.
My aunt used to watch "Let's Make A Deal" where the contestants have to choose between door number 1, 2 or 3.	In this example, you should be signing "door 1st, 2nd, or 3rd" and placing the signs in relative space to indicate where each door is.

PEOPLE AGE NUMBERS



ASL uses specific ways to refer to the age of people, distinct from discussing the age of a building or car or other things. In this set of numbers, the index finger of the dominant hand (with the number already formed) is touched to the chin and then moved out into the central signing space. Thus the numbers for 2-years old or 36-years old - are made in the single movement beginning at the middle of the signer's chin.

If the age is comprised of two numbers (42-years old for example), it is important not to change the number formation from the first to the second number until you have stopped moving your hand. In other words, pre-form the number 4 on your dominant hand and move it to your chin, touching the back of your index finger to the

middle of the chin. Then move the number 4 handshape to mid-space, pause and sign the number 2.

This set of numbers is only used for ages 1 and up; if you are talking about a baby - 1 days old, 6 weeks old, 18 months old - you will not use the standard people age numbers. For babies, you form the number according to counting number rules and add the sign "months" or "weeks" or "days".

GENERAL RULES: People Age Numbers

	Hand Shape	Palm Orientation	Location/Movement
Informal	# pre-formed on dominant hand	Follow <i>informational</i> # rules	Tip of finger at chin; move out to central space
Approximate	1st # pre-formed	Out, away from signer	Side-to-side shake + non-manual marker
Unformed Specific	1st # pre-formed	Out, away from signer	Strong singles slide + non-manual marker
Babies less than 1 year	Follow <i>counting</i> # rules	Away from signer	Add sign for month, day, week

Be sure to watch the signer on the DVD as he models how to show age 30, 40, 50, 60, etc. where only the initial number is signed (no zero), as well as how to sign "in his/her 30's, 40's, 50's, etc.) - a similar yet visually distinct movement and non-manual marker.

When talking about animals, buildings, or other objects you sign the number using *counting number* rules followed by the signs "years old" - my dog is 15 years old, this building is 50 years old, etc.

TRY IT OUT



One, Two, Buckle Your Shoe

Try signing the following sentences/concepts using the proper *people age* signs, as well as non-people age information.

SENTENCE	GUIDELINES
<p>I am 46; my wife is 39. We have 5 children: 18, 15, 9, 3 and 6-months. My Dad is 89 and my Mom is in her 70s.</p>	<ul style="list-style-type: none">♦ Be sure not to move from 4-to-6 (46) until you have brought the 4 to a stop in mid-signing space; same thing with 39.♦ Remember that 6-months does NOT follow the chin-contact rule.♦ When forming Dad's age - 89 - the 8 is formed before touching the back of the index finger to the chin - moved to mid-signing space and changed to 9. Like the counting numbers for 89, there is a slight side-to-side movement.♦ Mom is in her 70s - be sure the non-manual marker and repeat the side-to-side movement, in order not to be misunderstood as saying Mom is 70.
<p>I love this old house! It is 110 years old. The furnace is only 20 years old and the water heater is only 3 years old.</p>	<p>Since all of these age numbers refer to things other than people, you sign numbers according to counting number rules and add signs YEARS OLD.</p>



MONEY NUMBERS

When talking about money in ASL, there are different ways to convey information about dollars alone, cents alone and dollar/cents in combination. There are situations in which one does not sign “dollars” or “cents” and other times when you do. We will explain all of these norms below.

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Generally, if the topic is known to be money-related, you do NOT add the signs dollars or cents. You simply follow the hand shape, location, palm orientation and movement outlined below. When raising the topic of something money-related or when communicating in a formal setting, you will typically see the addition of the signs DOLLAR or CENTS.

GENERAL RULES: Money Numbers

	Hand Shape	Location	Palm Orientation/Movement
<u>Cents alone</u> .01 - .10	# pre-formed (no crossed fingertips)	Tip of index finger above dominant eyebrow	#slight twist outward, double movement
<u>Dollars alone</u> \$1 - \$9	# pre-formed (no crossed fingertips)	Mid-signing space	#slight twist inward
<u>Dollars with cents</u> Conversational	Dollar # pre-formed	Mid-signing space	#slight twist inward with dollar number; cents follow <i>informational</i> # rules (except for .50 where PO is in toward signer)
<u>Dollars with cents</u> Formal or when topic is unknown	# pre-formed	Mid-signing space, arm slightly extended	Follow <i>informational</i> # rule, adding signs for dollars and cents/decimal point

CLOCK-TIME NUMBERS

This number system requires contact between the dominant hand and the back of the non-dominant wrist. When indicating hours only (without minutes), the signer touches the index finger (or thumb depending on the pre-formed number), palm down, to the back of the wrist then moves the dominant hand with number formed to



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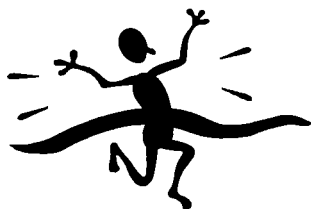
central space, palm orientation facing out, away from the signer. There is a slight, side-to-side shake of the hand indicating the number from hours 1 - 9; numbers 10 - 12 are repeated twice.

If the signer is talking about an hour plus minutes, the initial number formation and wrist contact is the same as described above but once the hour number is moved out to central signing space, there is no side-to-side movement. The hour number is then changed to indicate the number of minutes. It is important to remember NOT to shift to the minutes number while the hand is in motion. Wait until you have come to a stop in mid-signing space with the hour number, before changing hand shapes.

GENERAL RULES: Clock-Time Numbers

	Hand Shape	Location	Palm Orientation/Movement
Hours Only	# pre-formed	Tip of # on dominant hand touch back of non-dominant hand	# if wrist to signing space - usually with a slight side-to-side movement
Hours AND Minutes	# pre-formed	Tip of # on dominant hand touch back of non-dominant wrist	# from wrist to mid-signing space - HOLD - then change hand shape to show minutes

TRY IT OUT



Try signing the following sentences/concepts using the proper *money and/or clock-time number signs*

One, Two, Buckle Your Shoe

SENTENCES	GUIDELINES
<p>OK, let's meet at 3:00 tomorrow afternoon. Be sure to bring your registration fee -- \$510.18... and I'll be ready to pay the parking which is only \$3.00. Your appointment is at 3:20 p.m..</p>	<ul style="list-style-type: none"> ♦ \$510.18 - because the topic of "money" is known via "registration fee", you do not need to sign DOLLAR OR INDICATE THE DECIMAL POINT. ♦ \$3.00 only requires the 3-twist to show "dollars". ♦ 3:20 p.m. be sure to bring the 3 to a stop before signing 20, followed by "afternoon" to indicate PM.
<p>I can't believe the price of gas these days! When I first started driving, we could get gas for .30 - .45 cents per gallon. These days they are charging anywhere from \$1.98 - \$2.30 per gallon - depending on where you are in the state.</p>	<ul style="list-style-type: none"> ♦ .30 - .45 would be formed by touching the index of the 3 and 4 (palm out) above the dominant eyebrow, move out 2-3 inches, then move to the 2nd number in the combination. ♦ \$1.98 - \$2.30 - no need for signs "dollar", "cent", or "decimal".
<p>I'm meeting my brother at 8:45 tomorrow morning so we can look for a new computer. The one I want is marked down from \$3,750 to \$2,978. The special is only good until midnight.</p>	<ul style="list-style-type: none"> ♦ 8:45 - be sure to bring the 8 to a stop before signing 45, followed or preceded by "morning" to indicate AM. ♦ If you set up the sentence by saying "price marked down", no need for "dollar" to be signed.
<p>The bookstore will open at 12:01 AM next Saturday morning so die-hard Harry Potter fans can buy the newest book, due to be released that day. If you pre-order, it is only \$39.41, including tax.</p>	<p>Same notes as above.</p>

CALENDAR NUMBERS



When talking about a specific date on the calendar (Sept. 8th, May 3rd, etc.), signers follow the rules for ordinal numbers 1-9 (p. 11 - 13). Generally the date numbers 10-31 don't require the ordinal system, but for clarification or emphasis, one might add the "th" following the date number.

When counting days, weeks, or months, the number is embedded in the sign for day, week, or month up to the count of 9. The sign for "day", for example, would be formed with the number "3" on the dominant hand to convey the concept of 3-days (see signer on video). Counting years requires the number+ "s" hand shape of the dominant hand on top of a static "s" on the non-dominant hand, up to 9. Beyond that, you use the counting number form plus the sign for day, week, month, or year.

When discussing future or past days, weeks, months, and years, some numbers are embedded into the sign, other require the counting number plus the sign. Yesterday is technically "one-day past" and tomorrow is "one-day future" - both signed using the thumb to indicate the number one. Watch the signer on the video/DVD as he models the sign for "a few days" future and past.

GENERAL RULES: Calendar Numbers		
TYPE	RULE	TRY IT
Year Numbers	Beginning with 16 - 19: follow <i>counting</i> #s: <i>formal teens</i>	♦ 1888 ♦ 1995 ♦ 1600 ♦ 1300
	First year of a century: number plus 00	

GENERAL RULES: Calendar Numbers		
TYPE	RULE	TRY IT
Day of the month	Follow ordinal numbers	<ul style="list-style-type: none"> ◆ April 3rd ◆ January 7th ◆ November 1st ◆ July 4th
Counting 1-9	Number embedded into sign for "day, week, month: -- years made with the number and a modified sign for year	<ul style="list-style-type: none"> ◆ 9 weeks ◆ 3 months ◆ 7 years ◆ 5 weeks ◆ 8 months
Future/Past	DAYS: embedded 2-3 WKS/MO: embedded to 9 YRS: embedded up to 5 with a "pop" or "wobble" movement	<ul style="list-style-type: none"> ◆ 2 days from now ◆ 7 months ago ◆ 3 years in the future ◆ 3 days ago ◆ 6 months ago

PRONOUN NUMBERS

When it comes to pronouns, English is gender specific (e.g. he, she) and number neutral (e.g. we, they). ASL, by contrast, tends to be gender neutral (e.g. an index marker equals he/she/it but doesn't give the gender) and number specific (e.g. "the 2 of them", "the 8 of us" rather than the vague term "us" or "them". This has significance when signing pronouns.

Anytime you form a sentence that includes the concepts of "we" or "they", you need to think how to incorporate the number being referred to in the pronoun. "We" always means me (the signer/speaker) plus at least one more person. Listening to the entire utterance, you can usually determine how many people are involved. Because the signer/speaker is included in the concept of "we", one of the fingers used to form the number must index the signer. This results in signs that indicate the 2 of us, the 5 of us, or all of us (non-specific) - which is signed by signing a small circle, in which the index includes the signer in the circle.

One, Two, Buckle Your Shoe

“They”, by contrast, never includes the speaker/signer so when signed, it is important that none of the fingers used to form the number point toward or include the signer. Therefore, signing “they” must indicate “the 2, 7, or group” of others.

GENERAL RULES: Pronoun Numbers

TYPE	RULE	TRY IT
Singular	Not applicable	
Plural - indicating the signer 2 - 9	One finger in the number hand shape indexes the signer as the sign is moved back and forth or in a small circle.	<ul style="list-style-type: none">♦ My brother and I are going to the store.♦ We (the 5 of us) are so happy.♦ My (2) friends and I are graduating next May.
Plural - excluding the signer 2 - 9	No inclusion of the signer as number hand shape is moved back and forth in a small circle.	<ul style="list-style-type: none">♦ They (the 6 of them) are going to Europe.♦ My Dad and his new wife are coming for Chanukah.♦ The (3) neighbors are sharing the expenses.



HEIGHT/WEIGHT NUMBERS: People

ASL conveys information about the height and weight of people differently than the height and weight of other things.

PEOPLE HEIGHT

This combination of feet and inches is not used to describe the height of a building, dog, or anything other than people. This is one system that seems to be geographic in nature. Watch the model on the DVD then study the deaf people in your community to see if they use this system to describe the height of people or the size of babies.

In this system, the palm orientation is toward the signer with the hand on its side, fingertips to the side. The number indicating the feet is signed first, followed by a slight upward movement from the wrist and the movement to the number showing the number of inches. Is a person is 5 feet even or 6 feet even, the sign is made with a 0 to indicate the inches: 5'0" or 6'0". If there is a fraction, the palm orientation continues to be toward the signer (see signer on video).

GENERAL RULES: People Height Weight Numbers

	Hand Shape	Palm Orientation	Movement
Feet & inches	Foot # pre-formed	Toward signer, fingertips to the side	Slight movement upward, indicating inches
Pounds	Follow counting # rules plus sign for WEIGH or "lb"		
People Weight	The numbers follow <i>counting</i> # rules with the sign for "weight" or "lb" added.		

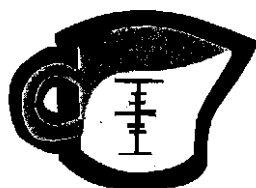
One, Two, Buckle Your Shoe

	Hand Shape	Palm Orientation	Movement
Babies	Numbers follow <i>informational #</i> rules followed by the fingerspelled word "ounce" or "oz" SIZE: Follow <i>informational #</i> rules plus sign for INCH or "in" WEIGHT: Follow <i>informational #</i> rules plus OUNCE or "oz"		

TRY IT

On September 13th (which is only 3 months away!), my daughter will give birth to my 1st grandchild. She and her hubby have been busy building a nursery in the guest room. Her Dad and I will fly out on Sept. 3rd to help out. I can't wait! Her husband is 6'8" and her brother is 6'5" -- but she is 5' -- so I don't know if we will have a big baby or not! Her husband's brother & wife had a baby last year -- 29"!!

MEASUREMENT NUMBERS



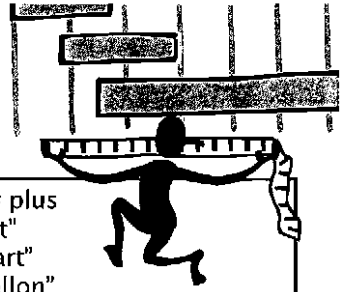
VOLUME

When conveying information regarding how many pints, quarts or gallons something requires, follow the *counting number* rules and add the fingerspelled abbreviation for the unit of measurement. If a fraction is involved, the palm orientation for the fraction will be the same as the whole number preceding the fraction. If, for example, the first number is "8" (palm orientation away from signer), the fraction following would also be formed with palm orientation away from signer. A "4", on the other hand, is formed with the palm orientation toward the signer so the following fraction would be signed with the palm facing the signer. If there is no preceding whole number, the palm orientation will be determined by the preceding sign.

LINEAR

Like the standard volume, follow the counting number rules and add the fingerspelled abbreviation for the unit of measurement - inch, feet, yards. If the linear measurement involves the size of lumber, 2-by-4 for example, or the size of a room (8 by 5), you would sign the numbers following *informational number* rules and either spell "by" or sign "x" by crossing the index fingers.

GENERAL RULES: Measurement



VOLUME	Counting # plus "pt" or "pint" "qt" or "quart" "gal" or "gallon"
LINEAR	Counting # plus "in" or "inch" "ft" or "foot" 2 by 4 or 2 x (formed by crossing 2 index fingers) 4

SPORTS NUMBERS

Sports have traditionally been a highly valued component of the culture of Deaf and hard of hearing people throughout all of North America. This has been one of the avenues through which these individuals meet with similar life experiences from difference geographical locations as teams from difference schools for the deaf or different states/provinces compete against each other. Depending on the part of the country, different sports take precedence. In some areas it is bass fishing or soccer, in others it is hockey or golf. Softball, football, and bowling typically cut across all geographic areas.

As a result, the ways various sports are discussed in ASL are intricate and complex. Each sports has its own way of signing the periods or rounds of play, the way one scores or earns points, how one refers to the players and the way scores are communicated. Because

of the amount and complexity of the way numbers are used in each sport, signers are encouraged to learn these signs “in the field”. You will learn a few basic concepts in these materials, but it will be best if you:

- ◆ Become familiar with the basic rules of the sport for which you want to learn the numbering system -- check it out on the Internet or chat with someone who plays that specific sport.
- ◆ Attend several games where this sport is played with deaf participants involved. Observe the ways they discuss the game in signs. Watching the “natives” use the numbering systems in the context of play is the very best way to learn these signs.
- ◆ After multiple times of observing players discussing the sport, set up one or more tutoring sessions with one or two of the people you meet at the sporting event for specific help in learning to sign the various numbers associated with the game.

REPORTING SCORES

One rule that seems to cut across most sports is that of reporting scores. Here, the winning score is always declared first - regardless of whether the signer’s favorite team or player won or lost. Further, the placement of the score in space indicates whether the signer is a fan of a particular player or team.

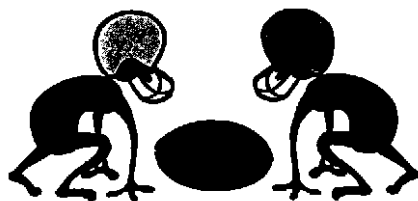


Scores signed in neutral space indicate that the signer is not a fan of either team or player being referred to. If a signer favors one team or player, the score for that individual or team will be signed close to the chest of the signer and other team or player’s score will be signed in central space, away from signer.

PERIODS OF PLAY

If the game is played in blocks of time - quarters, halves, periods, etc. - those blocks of time are referred to following counting number rules with the number formed on the non-dominant hand. The dominant hand will then point to the period being discussed. Hockey, for example, has three periods so the signer would hold the number 3 (palm facing the signer) to discuss what happened in any specific period or between periods. A football with four quarters would be referred to with the number 4 on the non-dominant hand (palm facing the signer) to discuss what happened in any specific quarter, between quarters or in a particular segment of the quarter. (See video for example)

GENERAL RULES: Sports Numbers		
		LOCATION
SCORE	Winning # is ALWAYS signed first	If the signer has no favorite team, numbers are signed in left/right neutral space. If the signer identifies with one of the teams, that score is signed close to the signer's chest, opponent team number is signed away from signer in central space.
PLAYER ID	Player is referred to by jersey number, not name	Player # is signed on shoulder or central chest, in the location of number on the player's jersey.
EVENTS	Quarters/Halves/Periods	Indicated on the non-dominant hand, palm facing signer, #4 for "quarters", #3 for periods in a hockey game, etc.



GENERAL RULES: Sports Numbers		
		LOCATION
TIMED EVENTS	Seconds, tenths or seconds	# of the largest times segment is signed following <i>informational #</i> rules. The wrist is dropped and second number is formed as palm is reoriented in mid-signing space. The drop between numbers represents the decimal point in series of numbers.
	Minutes, seconds, tenths of seconds	Signed following <i>informational #</i> rules with the same markers signed as those used when written (e.g. 6:4.5)

IDENTIFYING PLAYERS

In most team sports, players are referred to by their jersey number, rather than by their names. The number may be signed mid-chest or on the shoulder - in the same location where the number is placed on the jersey. This is just one more reason why those learning ASL must know about the sport and its players in order to understand or participate in discussions about the game.

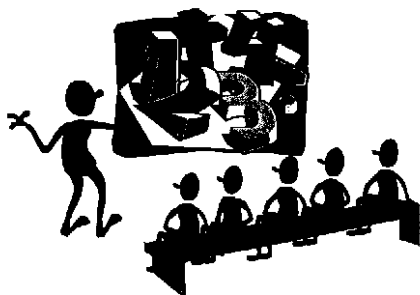
TIMED EVENTS

There are two predominant numbering forms when communicating time that is measured by a stop watch. If the time is only seconds and tenths of a second, the first number is formed in central space., following *informational number* rules. That hand with the number still formed then drops palm down rising quickly to central space with the second number. The "drop" in the sign production represents the decimal point. (*See video model*)

The second form involves minutes, seconds, and tenths of a second. Here, the numbers follow *information number* rules including the markers separating each number. The time 2 minutes, 5 addends and 3 tenths would be signed the same way it is written (e.g. 2:5.3).

MATH NUMBERS

Math numbers usually follow counting number rules. In some situations, one would sign the numbers with the appropriate function signs: add, subtract, multiply and divide. Typical arithmetic problems can be set up in ways that embed the numbers in the signs and recreate the problem to duplicate the way it looks on paper. Look at the model on the video as he demonstrates problems like those below



GENERAL RULES: Math Numbers.

FUNCTION SIGNS	Can sign specific signs indicating function: ADD SUBTRACT MULTIPLY DIVIDE:
EMBEDDED NUMBERS	Some math problems can be denoted by embedding numbers in ways that reflect the way a problem is written (see model on video/DVD)

More complex problems in algebra, geometry, and trigonometry are typically signed using informational number rules with various mathematical functions signed. Of course, since math is typically done with paper and pencil or on a chalkboard, the majority of the time such numbers do not need to be signed.

SUMMARY

In these materials, you have been introduced to 12 of the 27-plus numbering systems in ASL. It is our hope that this foundation will help you in your journey into the world of visual communication. Remember, learning any language is complex and takes time. The places where you learn a language you are learning differs significantly from your native language are most challenging. Therefore, when learning ASL the various numbering systems may be challenging. The authors are confident that you will master this aspect of ASL. Use patience, practice and spend every opportunity you can with Deaf and hard of hearing people as they use numbers in day-to-day interactions.

Here's to a happy and productive journey!

FEEDBACK

Please let us know if this workbook and DVD were helpful to you. We appreciate any suggestions you have regarding how we might make it better.

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