2020–21 Guidelines for Administration of Accommodations

Introduction

This document contains guidelines for the administration of the MCA with the script, scribe, and signed interpretation accommodations; it also includes additional guidance on ASL interpretation in the signed interpretation section. Detailed information for selecting the script, signed interpretation, and scribe accommodations is available in Chapter 4 of the *Procedures Manual* (PearsonAccess Next > Resources & Training > Policies and Procedures).

The applicable guidelines in this document should be provided to Test Monitors administering these accommodations for review prior to testing. **You may choose to provide only the information on the relevant accommodation and are not required to provide the entire document.**

Questions on these guidelines or the administration of accommodations should be directed to mde.testing@state.mn.us.

Contents

Mathematics and Science Script Guidelines

Background

A mathematics or science script may be provided to students with an Individualized Education Program (IEP) or 504 plan. When the script accommodation is selected, the reader uses the script to read aloud specified portions of the test to the student. The guidelines for reading aloud below are also included in the script.

New for 2020–21: Due to the increased cognitive load required to process the additional information in the script, the script is no longer available as a linguistic support for English learners. For more information, refer to *MCA Linguistic Supports Change: Removal of Accommodated Text-to-Speech and Script* (PearsonAccess Next > Resources & Training > Policies and Procedures). Note: An English learner with an IEP may still receive the script as an accommodation if required.

Qualifications of Readers

- The reader should be a district staff member who is familiar with the student, and who is typically responsible for providing this type of accommodation in the classroom.
- The reader must be familiar and comfortable with the process before providing this accommodation during test administration.

Preparation Procedures

- Readers must complete the *MCA Test Monitor* training course prior to test administration.
- Readers must be familiar with district policies and procedures for testing.
- Readers are expected to familiarize themselves with the test format using the item samplers and the applicable *Testing Directions* in advance of test administration.
    - For mathematics, the script must be administered with a paper test book (regular print, large print, or braille).
    - For science, the script can be administered with the online test or with a paper test book (large print or braille). If administering the script with the online test, readers must verify with the District or School Assessment Coordinator that the correct test for the science script has been assigned. If not set up correctly, the student's test will not match the script.
- If administering the script with a braille test book, readers should also refer to the *Test Monitor Notes for Braille* included with the braille test book.
- Readers must be familiar with the student's IEP or 504 plan, if applicable, so there are plans in place for providing all needed designated supports and accommodations.
- Readers should meet with students in advance and practice reading the script using the item samplers, as needed, so students are familiar with the format of the test that will be taken.
- Prior to administering the test, readers should inform students of the guidelines that must be followed for the administration of the script, as outlined in the following sections.
- Readers must confirm the testing location and test administration day(s) with the District or School Assessment Coordinator. The script accommodation must be provided in an individual setting or small group setting with other students who require the script. Readers must also know how testing is scheduled and when students will stop testing for the day.

Guidelines for Reading Aloud – Mathematics

General Instructions

- Read scripted instructions to students from the *Testing Directions: Paper*, as directed, and refer to the directions throughout test administration.
- Do not discuss test content with the student during or after the test.
- Do not discuss any portion of the test or the student's performance with others.

General Guidelines

- Read aloud test content in **bold type** in the script exactly as written, as steadily and clearly as possible without changing, emphasizing, or adding information.
- Do not paraphrase, clarify, define, or translate any part of the questions, answer options, or instructions in the script.
- The script is the only source you may use to read the test to the student. Reading any test content from the test book is not allowed and will require the test to be invalidated.
- Respond to student questions using only the scripted directions and guidance provided in the *Testing Directions: Paper*.

Respond to the Student's Needs

- Adjust your reading speed and volume if requested by the student.
- After a question has been read, allow the student time to respond. If the pause has been lengthy, you may ask, "Do you want me to repeat the question or any part of it again?" before continuing.

Maintain Neutrality

- Communicate in a neutral tone of voice, not monotone, and maintain a neutral facial expression and posture.
- Do not attempt to determine the correct answer to a question while reading, as this may result in pauses or changes in inflection that may mislead the student or suggest the correct answer.
- Be careful to give equal emphasis to each answer option. If the student chooses an answer before all the answer options have been read, ask, "Do you want the other answer options read?" before continuing.

Guidelines for Reading Aloud – Science

General Instructions

- Read scripted instructions to students from the applicable *Testing Directions*, as directed, and refer to the directions throughout test administration:
    - Refer to the *Testing Directions: Online* if using the script in conjunction with the online test.
    - Refer to the *Testing Directions: Paper* if using the script in conjunction with the large print or braille test.
- The script contains two sets of instructions: the first set is used for administering the script with the online test, and the second set is used for administering the script in conjunction with a large print or braille test book. Use the tabs on the pages in the script to confirm you are using the correct script.

- Do not discuss test content with the student during or after the test.
- Do not discuss any portion of the test or the student's performance with others.

General Guidelines

- Read aloud test content in **bold type** in the script exactly as written, as steadily and clearly as possible without changing, emphasizing, or adding information.
- Do not paraphrase, clarify, define, or translate any part of the questions, answer options, or instructions in the script.
- The script is the only source you may use to read the test to the student. Reading any test content from the test book or screen is not allowed and will require the test to be invalidated.
- Respond to student questions using only the scripted directions and guidance provided in the *Testing Directions: Online* or *Testing Directions: Paper*.

Respond to the Student's Needs

- Adjust your reading speed and volume if requested by the student.
- After a question has been read, allow the student time to respond. If the pause has been lengthy, you may ask, "Do you want me to repeat the question or any part of it again?" before continuing.

Maintain Neutrality

- Communicate in a neutral tone of voice, but not monotone, and maintain a neutral facial expression and posture.
- Do not attempt to determine the correct answer to a question while reading, as this may result in pauses or changes in inflection that may mislead the student or suggest the correct answer.
- Be careful to give equal emphasis to each answer option. If the student chooses an answer before all the answer options have been read, ask, "Do you want the other answer options read?" before continuing.

Scribe Guidelines

Background

In cases where visual or motor difficulties prevent a student from indicating their own responses, students with an IEP or 504 plan may be provided the scribe accommodation. The student dictates via speech or an assistive communication device while the scribe indicates responses in paper test materials or navigates and enters responses into the online test. Scribes may also be provided to general education students in the case of an injury situation (e.g., broken arm).

Qualifications of Scribes

- The scribe should be a district staff member who is familiar with the student, and who is typically responsible for providing this accommodation in the classroom.
- The scribe must have prior experience in providing scribing or transcribing services and must be familiar and comfortable with the process before providing this accommodation during test administration.

Preparation Procedures

- Scribes must complete the *MCA Test Monitor* training course prior to test administration.
- Scribes must be familiar with district policies and procedures for testing.
- Scribes are expected to familiarize themselves with the test format using the item samplers and the applicable *Testing Directions* in advance of test administration.
- Scribes must be familiar with the student's IEP or 504 plan, if applicable, so there are plans in place for providing all needed designated supports and accommodations.
- Scribes should meet with students in advance and practice scribing using the item samplers, as needed, so students are familiar with the format of the test that will be taken.
- Prior to administering the test, scribes should inform the students of the guidelines that must be followed for the administration of the scribe accommodation, as outlined in the following sections.
- Scribes must confirm the testing location and test administration days with the District or School Assessment Coordinator. This accommodation must be provided in an individual setting so as not to disrupt other students who are testing. Scribes must also know how testing is scheduled and when students will stop testing for the day.

Guidelines for Scribes

General Instructions

- Read scripted instructions to students from the *Testing Directions: Online* or *Testing Directions: Paper*, as directed, and refer to the directions throughout test administration.
- Do not discuss test content with the student during or after the test.
- Do not discuss any portion of the test or the student's performance with others.

Respond to the Student's Needs

- As needed, respond to procedural questions asked by the student (e.g., test directions, navigation within the test). Do not answer student questions about test items. To ensure a standardized administration, scripted directions and guidance from the *Testing Directions: Online* or *Testing Directions: Paper* should be used to respond to the student whenever possible.
- Use of the online and accessibility tools within the online test as requested by the student.
- Allow the student to review and request changes to what has been entered or written. Make all requested changes, even if incorrect.

Transcribe ONLY what is communicated by student

- Do not question or correct student choices, alert students to errors, prompt, or influence students in any way that might compromise the integrity of student responses. You may repeat directions provided on the item (e.g., instructions that clarify how many responses are required or what symbols may be used) but do not provide additional information.
- **New for 2020–21**: Use the following guidance for certain types of items:
  - For Science MCA constructed response items, the scribe must type the response as directed by the student without any cueing or guidance to the student. Capitalization, spelling, and punctuation are not considered as part of the scoring and do not need to be specified by the student. The scribe will correctly spell all words as dictated and conform to standard writing conventions.
  - For fill-in-the-blank items:
    - The scribe must write or type the response as directed by the student without any cueing or guidance to the student. If a warning comes up when inputting an answer online you may read the warning to the student but do not prompt nor help the student on how to input the answer a different way.
    - Specifically for Mathematics MCA, if the response includes a decimal, fraction, or negative sign, the student must specify where to place them.
    - Specifically for Science MCA, capitalization, spelling, and punctuation are not considered as part of the scoring and do not need to be specified by the student. However, if the response includes a decimal or negative sign, the student must specify where to place them.
- Do not edit or alter student work in any way, and record exactly what the student has dictated.
- Ask the student to restate the answer or parts of an answer as needed. Such requests must not be communicated in a manner suggesting that the student should make a change or correction.

Maintain Neutrality

- Communicate in a neutral tone of voice, but not monotone, and maintain a neutral facial expression and posture.
- Do not read aloud student responses or any test content.
- Avoid conversing with the student about test content during test administration.

Signed Interpretation Guidelines

Background

In cases where a student requires a sign language accommodation, an interpreter is provided. There are two accommodations available for students with an IEP or 504 plan: signed interpretation of the Mathematics and Science MCA scripts and signed interpretation of test directions. The guidelines for signing a mathematics/science script below are also included in the script.

Qualifications of Interpreters

- Whenever possible, the interpreter should be familiar with the student and someone who is typically responsible for providing signed interpretation in the classroom.
- The interpreter must be familiar and comfortable with the process before providing either of these accommodations during test administration.

Preparation Procedures

- Interpreters must complete the *Test Security Training* prior to test administration. If they are also the Test Monitor, the *MCA Test Monitor* training course must be completed.
- Interpreters must be familiar with district policies and procedures for testing, and should verify with the District or School Assessment Coordinator on the process for ensuring the applicable *Testing Directions* and/or script are available prior to testing.
- Interpreters are expected to familiarize themselves with the test format using the item samplers and the applicable *Testing Directions* in advance of test administration.
- If signed interpretation of the mathematics/science script is required, interpreters should be provided a copy of the script. Upon request, interpreters should be provided access to the script up to 5 business days prior to the scheduled test administration, in order to become familiar with the words, terms, symbols, signs, and/or graphics that will be presented to the student. The *Testing Directions* may be provided further in advance, as they are not secure test materials.
    - Upon review of the mathematics/science script, if an interpreter is unsure how to sign unfamiliar content, the interpreter should collaborate with an ASL-fluent content expert (if available) to determine which sign is most appropriate to use. Otherwise, finger spelling should be used.
    - If collaborating with an ASL-fluent content expert, only concept(s) in question may be shared; the entire script cannot be shared. The content expert must also complete *the Test Security Training*.
    - If collaborating with another ASL-fluent content expert, any part of the script may be discussed but cannot be shared. All interpreters involved in the conversation must have completed *the Test Security Training* and ensure that the discussion format maintains security of the script. Keeping the script secure includes not sharing electronically over email, leaving materials unsecured or left out, not discussing or sharing the test content with anyone else, or removing materials from the secure location.
- Interpreters must be familiar with the student's IEP or 504 plan, so that there are plans in place for providing all needed designated supports and accommodations. Interpreters must be aware of

whether a student requires additional tools, devices, or adaptive equipment that has been approved for use during the test.

- If possible, interpreters should meet with students in advance and practice signing the directions and/or the script using the item samplers, as needed, so students are familiar with the format of the test that will be taken.
- Prior to administering the test, interpreters should inform students of the guidelines that must be followed for these accommodations, as outlined in the following sections.
- Interpreters must confirm the testing location and test administration day(s) with the District or School Assessment Coordinator. The script accommodation must be provided in an individual setting or small group setting with other students who require the script. Interpreters must also know how testing is scheduled and when students will stop testing for the day.

Guidelines for Signed Interpretation of Test Directions

- Sign scripted directions as steadily and clearly as possible without changing, emphasizing, or adding information. Do not sign any part of the questions or answer options in the assessment, unless the student also requires the script accommodation for mathematics or science.
- Use signs that are conceptually accurate, with or without simultaneous voicing.
- Use facial expressions consistent with sign language delivery. Do not use expressions that may be interpreted by the student as approval or disapproval of the student's answers.
- Do not clarify, provide additional information, or assist the student outside of the guidance provided in the *Testing Directions: Online* or *Testing Directions: Paper*.
- Do not influence the student's selection of a response in any way.
- Adjust your signing speed if requested by the student.
- Do your best to use the same signs if the student requests a portion repeated.
- When using an ASL sign that can represent more than one concept or English word, you must adequately contextualize the word, in order to reduce ambiguity. You may also spell the word after signing it, if there is any doubt about which word is intended.
- Spell any words requested by the student during the test administration.
- Respond to student questions using only scripted directions and guidance from the *Testing Directions: Online* or *Testing Directions: Paper*.

Guidelines for Signed Interpretation of Mathematics and Science Scripts

General Instructions

- Sign scripted instructions to students from the *Testing Directions: Online* or *Testing Directions: Paper*, as directed, and refer to the directions throughout test administration.
- Do not discuss test content with the student during or after the test.
- Do not discuss any portion of the test or the student's performance with others.

General Guidelines

- Sign test content in **bold type** in the script, as steadily and clearly as possible without changing, emphasizing, or adding information.
- Do not clarify or define any part of the questions, answer options, or instructions in the script.

- The script is the only source you may use to sign the test to the student. Signing any test content from the test book or the screen is not allowed and will require the test to be invalidated.
- Respond to student questions using only the scripted directions and guidance provided in the *Testing Directions: Online* or *Testing Directions: Paper*.

Use Professional Judgement when Signing

- Do your best to use the same signs if the student requests a portion to be repeated.
- Use signs that are conceptually accurate, with or without simultaneous voicing.
- When using an ASL sign that can represent more than one concept or English word, you must adequately contextualize the word to reduce any ambiguity. You may also spell the word after signing it to remove any doubt about which word is intended.
- If you are unsure how to sign and/or pronounce an unfamiliar word, advise the student of the uncertainty and spell the word.
- In cases where signs give clues to the answer, finger spelling must be used.

Respond to the Student's Needs

- Adjust your signing speed if requested by the student.
- Spell any words requested by the student.
- After a question has been signed, allow the student time to respond. If the pause has been lengthy, you may ask, "Do you want me to sign the question or any part of it again?" before continuing.

Use Appropriate Physical/Facial Expressions

- Use facial expressions consistent with sign-language delivery; do not use expressions that may be interpreted by the student as approval or disapproval of the student's responses.
- Do not attempt to determine the correct answer to a question while signing, as this may result in pauses or changes in inflection that may mislead the student or suggest the correct answer.
- Be careful to give equal emphasis to each answer option. If the student chooses an answer before all the answer options have been signed, ask, "Do you want the other answer options signed?" before continuing.

American Sign Language (ASL) Guidelines

When the language of an assessment changes, it raises concerns about the validity of inferences made from the test scores. In order for test scores on interpreted tests to be comparable with those from assessments administered in English, it is imperative that the interpreted test items represent the content presented in the English text in a way that does not change what is being measured. Maintaining the meaning of the test item does not entail a literal or direct word for word translation of the English text into the other language; in fact, this is highly likely to alter the original meaning. Rather, the translation must convey the same essential meaning of the original text while also adhering to the linguistic rules and conventions of the language into which the items are being interpreted. In order for the interpreted test to be fair and lead to valid conclusions about student performance, the translation cannot alter the constructs measured by the item, lead or cue students to a particular response, or give an unfair advantage or disadvantage to the students who receive the interpreted version over students who receive the English version.

This section contains two parts: *ASL Grammar Guidelines* and *Content Guidelines*. The purpose of these guidelines is to provide specific information on how to achieve the balance of conveying the construct in a manner that reflects the linguistic rules and conventions of ASL while at the same time maintaining the essential meaning of the item. The *ASL Grammar Guidelines* section highlights key grammar rules that should be reviewed and considered for incorporation in all items. Much of the ASL guidance provided here are adapted from Georgia's document titled *American Sign Language Guidelines* from 2017.

ASL Grammar Guidelines

1. Syntax/grammatical structure.

Like all languages, ASL is rule-governed, operating on a specific set of linguistic principles that distinguish it from other languages, including English. ASL and English can express the same content, but employ different rules to do so. When interpreting a test item using ASL, every sentence must be signed in a manner that conforms to rules governing ASL word order, sentence type, subject-verb-object agreement, prosody, and classifier constructions.

a. **Word order.** ASL follows a set of syntactical (word order) rules in the composition of sentences. It is imperative when interpreting test items to adhere to the rules governing ASL syntax, rather than defaulting to the word order of the sentences as written in the English item. In order to convey the exact meaning of the test item, and prevent confusion, sentences must be composed carefully and thoughtfully, with respect to ASL syntax. For example, the first five words of the English sentence "Jamie goes to the store [to buy magazines]", is structured differently in ASL: the object is stated first (the store), the subject second, (Jamie), and finally the verb (goes).

b. **Sentence types.** A variety of sentence types is used in ASL. Decisions about which sentence type to use should be guided by the content in the item, what is being measured, and maintaining students' interest and engagement. Some example sentence types are as follows:

   i. **Rhetorical questions.** In ASL, sentences can include rhetorical questions. For example, the English sentence "Jamie goes to the store to buy magazines" can be structured in ASL as "STORE, JAMIE, GOES, WHY?, BUY MAGAZINES."
   ii. **Conditionals.** Conditional sentences express hypothetical situations and their consequences, or factual implications. In ASL, non-manual grammatical features distinguish the dependent clause containing the conditional "if he buys two magazines" and the main clause conveying the consequence "how much money will he have left?" In addition, a brief pause after the dependent clause marks the transition to the main clause.
   iii. **Topic comment.** ASL sentences may be presented in a topic-comment structure. The topic is declared at the beginning of a sentence, and marked with linguistically correct non-manual grammatical features. The remainder of the sentence relates to the established topic, and is marked as the comment. To convey the same meaning as the English sentence "School is on Monday morning" the interpreter first introduces the topic, SCHOOL, and then completes the phrase by commenting on the topic, MONDAY MORNING.

c. **Prosody**. Prosody in any language plays an important role in the production and perception of every utterance. Prosody provides mechanisms for organizing, sequencing, shifting topics, separating ideas, and providing hierarchy. In spoken languages, prosody manifests as pausing, inflection, and emphasis, expressed by altering the speech stream through stress, lengthening, and volume. In ASL, visual prosodic features also include pausing, inflection, and emphasis, and are expressed by altering the sign

stream through stress, lengthening and varying use of sign space. It is important when interpreting test items using ASL that prosodic features are used in a linguistically appropriate manner to provide structure and organization, thereby ensuring that students have clear access to the test content.

d. **Classifier constructions.** Classifier construction uses the body, space, and time to represent settings, objects, and events. For example in the English sentence, "A car went up a hill and parked at the top", the interpreter would first sign CAR, then use a three hand-shape (forefinger and middle finger with thumb pointing up) to represent the car as a classifier, and a specific movement pattern to represent the car going up a hill and parking at the top. Manner and other adverbial information are also efficiently and appropriately conveyed in classifier constructions; e.g., a car moving quickly up a hill is represented differently than a car moving slowly.

e. **Non-manual grammar**. Non-manual grammar in sign languages is most often expressed on the face and conveys a rich array of information such as sentence type, topic marking, and adjectival and adverbial modifications. Grammatical markings include changing facial expressions through the eyes, cheeks, and mouth, and shifting body movements. Non-manual elements are very important components of ASL grammar as they add a layer of obligatory linguistic information across the signs being uttered.

   i. **Inflectional facial expression/sign movement**. Facial changes such as raised eyebrows, puffed cheeks, pursed lips, clenched teeth can all be used to show size, degree, manner, and temporal aspect (time) of what is being signed. As an example, the word "large" might be shown through a sign, where "huge" is shown using the same sign, with altered hand movement, puffed cheeks, and raised eyebrows.

   ii. **Negation/affirmation**. Non-manual markings for negation or affirmation can be layered across a sign, phrase or sentence, by simultaneously signing while also nodding the head "yes" or shaking the head "no." Timing is an important element in negation and affirmation; the correct signal must be applied over the correct string of signs to accurately convey the information desired. For example, to express "not" in the sentence "I will not be going tonight", the interpreter may add the non-manual marker of the head shaking "no" across the entire sentence. If "I will not be going tonight," is followed by, "but I will be going tomorrow," the initial negation quickly switches to affirmation at the appropriate moment.

2. Noun/pronoun structures.

In ASL discourse, a noun must first be stated before it can be referred back to as a pronoun. Pronouns in ASL involve pointing to a referent if it is physically present and visible to the interpreter. If the referent is not present, it is identified with a sign then designated as a referent in a location close to the interpreter's body. As an example, in the English sentences "A boy has five cakes. He sold three cakes at the school carnival," the boy would first be introduced with the sign for BOY, and then "assigned" a physical referent space close to the interpreter. From that point on, BOY would not be signed; rather the physical location that the interpreter previously established serves as a pronoun [equivalent to saying "he" in English]. Test items that contain proper names, such as "Jason has five boxes" are introduced according to this rule. The interpreter will begin by stating that there is a boy and his name is Jason. After introducing Jason, a physical referent point will be established, which, when pointed to, is the pronoun for Jason. Alternatively, the name will be fingerspelled to reintroduce Jason.

3. Numbers and Plurality.

More than a dozen numbering systems have been identified in ASL; as a result, pluralization of actions and nouns are a complex process in ASL; some nouns and verbs can be inflected for plurality via numeral incorporation or a process known as reduplication and some cannot. When numeral incorporation or reduplication is ungrammatical, plurality must be expressed with additional signs, e.g., the sign for CAT followed by THREE to indicate three cats. Therefore, careful consideration should be given to presentation of numbers and plurality in test items. Two examples are presented below.

a. **Number incorporation.** Number incorporation occurs when a number is included in a sign. For example, in the sign for "three years-old" the sign for AGE and the number THREE are combined to simultaneously include both pieces of information. To do so, the interpreter starts with the number three hand-shape in ASL (thumb, forefinger and middle finger) touching the chin at the tip of the forefinger. The THREE hand shape then moves away from the chin in a specific sweeping motion, which is the sign for "years old" or "age", creating one sign that has the equivalent meaning of a two or three word phrase in English.

b. **Pluralization.** When nouns are pluralized, the linguistically correct movement such as sweeping, inflection of movement, reduplication, and repositioning must be used. For example, "he" changes to "they" by inflecting the single movement in the sign for "he" to a sweeping motion of the dominant hand to indicate there is more than one person.

4. Verbs.

ASL verbs can be modified to show the type of action, incorporate subject and object information, and can include things like repeated action or action over time.

a. **Appropriate directionality, pronoun and subject/object incorporation rules for ASL verbs.** Those verbs that are indexical, or incorporate information about subjects and objects, are signed in a specified path from subject to object. This movement path is the only way to differentiate such English sentences as "Sally walked home from school," and "Sally walked to school from home."

b. **Temporal actions/repeated actions.** In ASL, there are no grammatical tense markings on verbs; additional signs are used to mark past, present, or future action. However, there are many ways to modulate ASL verbs for verbal aspect, framing the action with respect to time (frequency or duration) using linguistically patterned signing, movements and beats. These are known as reduplication and aspect (placing the verb in an aspectual frame). Through reduplication, aspectual framing, or a combination of both, interpreters can show if something is happening regularly, continually, repeatedly or for an extended period of time. This process often differs from one ASL verb to the next. Verbal aspect is a complex linguistic process with somewhat unusual rules in ASL; therefore, careful consideration must be given to ensure appropriate choices are made when interpreting test items. In the ASL version of the sentence "Rachel and Joe study together every week", the verb STUDY is inflected with a specific movement pattern and beat to indicate that the studying happens regularly.

Content Guidelines

This section describes guidelines for presenting specific types of test content in ASL: academic terms; expressions and equations; and graphs and images. Note: If the way you sign a concept during instruction is different from what is provided in these guidelines, you can continue to sign the concept in the same way you do during instruction, unless it changes the construct of the item being assessed.

1. Academic Terms

Test items in mathematics often include specific mathematical terms that are integral to the construct being measured. Some terms need to be represented in English via fingerspelling because there is a concern that signing these terms may cue students to the correct answer and/or provide extra information. Fingerspelling is the process of presenting each letter of an English word or term individually, instead of presenting the ASL sign for the term.

a. **When using ASL to interpret test items, it is important to consider construct violation issues and examine the extent to which a sign provides comparable, more, or less information than the English word in print.** It is important for the interpreter to critically evaluate the meaning conveyed by both the individual ASL term(s) and the individual English term(s), as well as the meaning of the entire item conveyed in each language. For example, consider the term "triangle." The ASL term TRIANGLE is signed as a shape with three sides. If a test item is designed to assess whether or not students can identify a triangle from among a group of shapes, or describe the properties of a triangle, one might argue that the sign for triangle cues students to the correct answer because of its physical representation of a three sided figure. However, one might also argue that the word "triangle" when printed in English provides two key cues to students that could give them an advantage in answering the test item 1) "tri" could signal to the student that there are three of something and 2) "angle" tells the student that the shape includes angles. Looking at the meaning conveyed from these two perspectives, it is clear that the ASL sign and English word for triangle provide potential cues to the meaning of the word. This example illustrates the importance of critically examining both the ASL and English text for the term in question and examining each from multiple perspectives. Words in ASL and English provide meaning; sometimes the two languages provide different cues, but even then often of a similar type. It is important to use each language to convey the test content without focusing on direct or word-to-word translation.

b. **Consider the additional cognitive complexity that is added to the test item when a term or terms are fingerspelled rather than signed.** Choosing to fingerspell terms over using ASL signs may add to the cognitive complexity of the test item because it requires students to decode and comprehend the English spelling of the term. Fingerspelling a word that has an ASL sign to a deaf student during an assessment is comparable to requiring a hearing student to listen to a word spelled aloud rather than allowing them to read the word in print. In both cases, the cognitive complexity is increased because the student has to first recognize a word that is being conveyed in an uncommon format before they can consider the meaning of the word. This increase in cognitive load could make it more difficult for the student to understand and respond to the item. There may also be issues related to cumulative fatigue when a high quantity of terms are fingerspelled across the assessment. In addition, it is important that fingerspelling used in assessment is consistent with the way fingerspelling is used during instruction.

c. **Limit fingerspelling to cases where most students are unlikely to be familiar with an ASL term and where fingerspelling a term would be linguistically appropriate.** When there is an ASL term available, it should be

signed. It is recommended to limit fingerspelling to cases where most students are (a) unlikely to be familiar with a sign and (b) where fingerspelling a term would be linguistically appropriate. An example includes "quadrilateral." When fingerspelling is used, the ASL term should be presented first, followed by the fingerspelled English term.

2. Expressions and Equations

It is recommended to sign expressions and equations in ASL test items. Expressions and equations are a form of notation often incorporated into test items (e.g., $x + y = 45$). Including expressions and equations in ASL assessment items could present two challenges to students' understanding of the content in the item. First, when items contain long or complex expressions and equations, the number of signs in the item increases greatly; this may add construct-irrelevant cognitive complexity to the information that a student needs to process while viewing the ASL version of the item. The second issue is that there can be more than one way to sign expressions and equations and if the method used in the ASL version of the item is not consistent with instruction, the student may be confused, resulting in compromised access to the test content.

a. **Sign expressions and equations which are in test items.**

3. Graphs and Images

When presenting test items in a visual-spatial language such as ASL it is important to consider how to pronominalize by establishing and referring to information in the space around the interpreter. In ASL, both abstract and concrete information can be presented spatially in a number of ways. Graphs and images are presented as viewed from the interpreter's perspective, not from the viewer's perspective, consistent with the rules of ASL.

a. **Sign all titles and labels provided for graphics and images included a brief description if needed.**

b. **When describing graphs, the characteristics of the graph should be consistent with the text-based version of the graph.** For example, if a line graph is being referred to, the interpreter should orient the graph from his/her own perspective on the horizontal or vertical plane and depict the line in the same direction (slope) as the graph on the test booklet or computer screen.

c. **Graphs should be presented in the most linguistically appropriate way.** In most cases, this will be in the general space in front of the interpreter's body.

ASL Glossary - Guidelines for Specific Test Elements

Use the information described in the table below for examples of signing symbols, numbers, formulas, abbreviations, and other special information found in the Minnesota assessments.

Conventions

DESCRIPTION	CONTENT AREA	HOW TO SIGN	EXAMPLE
Abbreviations	Math, Science	If a unit of measurement is abbreviated, sign each letter in the abbreviation versus each word being abbreviated.	"kg," NOT "kilograms"
Apostrophes	Math, Science	Interpreter should not sign "s" as "ess". It will be signed as the plural form of the word.	"Evelyn's table" should be signed as "Evelyns table"
Bullet points	Math, Science	Interpreter will pause between bullets and phrases.	
Dates	Math, Science	Dates will be signed using the complete words for days of the week, months of the year, and years. Numbers will be signed as appropriate.	For the year, the last two numbers are paired. Example: 2010: Twenty ten June 16, 1978: "June month sixteen nineteen seventy-eight" June 16th: June sixteen" 1978: "Nineteen seventy-eight"
Time	Math, Science	When "AM" and "PM" appear in conjunction with a time zone, there will be a pause between the time of day and the time zone.	"2:30p.m. eastern" will be signed as " time (touching the wrist) two thirty night east"

Numbers

DESCRIPTION	CONTENT AREA	HOW TO SIGN	EXAMPLE
Whole large numbers	Math, Science	Large numbers (numbers with more than 6 digits) will be signed as the numbers in order.	"453,562,908" will be signed as four hundred fifty-three million (breathe) five hundred sixty-two thousand (breathe) nine hundred eight" In cases where signing the number will give away the answer refer to the number as "the number shown" and point to the number. Ex: What is 453,562,908 written in words?, Sign as: "In words, what is the number shown?" and point to the number. Ex: What is the value of the digit 3 in the number 352?" Sign as: "What is the value of the digit 3 in the number shown?" and point to the number.
Fractions	Math, Science	Simple fractions will be signed as "numerator over denominator" Mixed numbers will be signed as "whole number and numerator over denominator" Fractions that contain expressions and/or variables in the numerator or denominator will be signed as described in the example column.	$\frac{3}{4}$ will be signed as "three over four", NOT "three fourths" $2\frac{3}{4} + 6\frac{7}{8}$ will be signed as "two and three over four, plus six and seven over eight" $\frac{(3-1)}{4+8\div2\times3}$ will be signed as "open parenthesis three minus one, close parenthesis, over four plus eight divided by two times three"

DESCRIPTION	CONTENT AREA	HOW TO SIGN	EXAMPLE
Exponents	Math, Science	The exponent 2 will be signed as "squared" . All other numeric exponents will be signed as "to the nth power" An exponent of 0 will be signed as "to the zero power." Variables presented as exponents will be signed as they appear.	2^2 will be signed as "two squared" 6^{-5} will be signed as "six to the negative fifth power" 3^0 will be signed as "three to the zero power" 2^x will be signed as "two to the *x* power"
Decimals	Math, Science	Decimals will be signed as "point". Digits after the decimal will be signed individually.	"3.504" will be signed as "three point five zero four" "46.8" will be signed as "forty-six point eight" 4.333333… will be signed as "four point three repeating" across the body.

Symbols

DESCRIPTION	CONTENT AREA	SYMBOL	HOW TO SIGN (ASL)
Denominations (money)	Math, Science	$	$13.50 will be signed "thirteen dollars and fifty cents" $45.00 will be signed "forty-five dollars" $100.05 will be signed "one hundred dollars and five cents" $0.45 will be signed as "forty-five cents"
Mathematical Symbols	Math, Science	<	5 < 10 will be signed "five is less than 10"
Mathematical Symbols	Math, Science	>	10 > 5 will be signed "ten is greater than 5"
Mathematical Symbols	Math, Science	≤	A ≤ B will be signed "A is less than or equal to B"
Mathematical Symbols	Math, Science	≥	A ≥ B will be signed "A is greater than or equal to B"
Mathematical Symbols	Math, Science	~	A ~ B will be signed "A is similar to B"
Mathematical Symbols	Math, Science	≈	A ≈ B will be signed "A is approximately equal to B"
Mathematical Symbols	Math, Science	≠	A ≠ B will be signed "A is not equal to B"

DESCRIPTION	CONTENT AREA	SYMBOL	HOW TO SIGN (ASL)
Mathematical Symbols	Math, Science	≅	A ≅ B will be signed "A is congruent (signed as "same" with two hands across the body) to B"
Mathematical Symbols	Math, Science	+	A + B will be signed "A plus B"
Mathematical Symbols	Math, Science	–	A – B will be signed "A minus B"
Mathematical Symbols	Math, Science	±	A ± B will be signed "A plus or minus B"
Mathematical Symbols	Math, Science	×	A × B will be signed "A times B"
Mathematical Symbols	Math, Science	÷	A ÷ B will be signed "A divided by B"
Mathematical Symbols	Math, Science	–5	This will be signed "negative five"
Mathematical Symbols	Math, Science	|5|	This will be signed as "the absolute value (flat hands up and down together, like the word "person" is signed) of five"
Mathematical Symbols	Math, Science	°F	75 °F will be signed "Seventy-five temperature F"
Mathematical Symbols	Math, Science	°C	45 °C will be signed "forty-five temperature C"
Mathematical Symbols	Math, Science	√	This will be signed ""R√"
Mathematical Symbols	Math, Science	Π	This will be signed "pi"
Mathematical Symbols	Math, Science	*	A * B will be signed "A times B"
Mathematical Symbols	Math, Science	ϑ	This will be fingerspelled as "T-H-E-T-A"
Mathematical Symbols	Math, Science	α	This will be fingerspelled as "A-L-P-H-A"
Mathematical Symbols	Math, Science	∞	This will be signed "Infinity" with the letter *i* on the forehead then outward letter *y* from the forehead
Mathematical Symbols	Math, Science	{ }	{10,20,30,40} will be signed "the set of ten, twenty, thirty, forty"
Mathematical Symbols	Math, Science	*f*(*x*)	This will be signed as "F of X"

DESCRIPTION	CONTENT AREA	SYMBOL	HOW TO SIGN (ASL)
Formulas	Math, Science		Letters and numbers of mathematical formulas will be fingerspelled exactly as they are printed; no representations of letters will be made: *A=bh* will be signed as "Capital A equals b h" NOT "area equals base times height"
Elements or Compounds	Science		The chemical symbols and subscripts in a chemical formula will be signed as letters and numbers: H_2O will be signed as "H two O" "NaCl" will be fingerspelled as "N A C L" In a chemical formula, a quantity before a chemical symbol or chemical formula is signed as a number. A right-facing arrow (or a double headed equilibrium arrow) will be signed as "yields": $6C0_2 + 6H_2O + Energy \rightarrow C_6H_{12}O_6 + 6O_2$ will be signed as: "6-C-O-2 (bring hand down to sign 2 lower) plus 6-H-2 (hand down to sign 2 lower) -O plus energy yields C-6 (sign 6 lower) -H-12(sign 12 lower) 0-6 (sign 6 lower) plus 6–O-2 (sign 2 lower)"
Angles and points	Math		Angles will be signed as they are named and without pauses: When variables on a figure appear, such as Q' R' S' T', it will be signed as Q, R, S, T" Angle ABC will be signed as "Angle ABC"
Line segments	Math		Line segments will be signed as "line XX" $\bar{X}Y$ will be signed as "line XY"
Trigonometric functions	Math		Trigonometric functions will be signed as full words. "Sin 15°" will be signed as "sine of fifteen degrees".

Graphs

DESCRIPTION	CONTENT AREA	HOW TO SIGN (ASL)
General	Math, Science	Sign the words in the graph or table as written in the script. Below are some best practices for signing tables, graphs and figures that are reflected in the script.
Venn Diagrams	Math, Science	The elements of Venn diagrams will be signed in the following order: titles, and then labels in the diagram
Coordinate Grids	Math, Science	Sign the title associated with the coordinate grid, as well as any headers or labels on the X- and Y-axes

DESCRIPTION	CONTENT AREA	HOW TO SIGN (ASL)
Graphs	Math, Science	Sign the title associated with the graph, as well as any headers s Ex: The graph is titled 'world population' The graph shows 'number of people' and 'Year'
Tables	Math, Science	Sign the titles of tables and any headers. Words within the table should be signed. Numbers should not be signed. If the header of a row or column is a number, such as in a list, the numbers should be signed in this case. Ex: The table is titled 'Toy Sales."' Columns are labeled 'Month'' and 'Number of Toys' Months' are labeled 'September, October, November, etc.'
Line Plots	Math, Science	Sign text within line plots Ex: The plot shows 'X' and 'Y'
Tree Diagram	Math, Science	Sign text from left to right from top to bottom Ex: The tree diagram shows 'h and t''
Pictures	Math, Science	If text in image is circled, highlighted, or called out in any way it should be signed.
Pie Charts	Math, Science	Sign words within pie charts by starting at the top and then working clockwise
Scatter Plot	Math, Science	Sign the title associated with the scatter plot, as well as any headers on the X- and Y-axes Ex: The scatter plot is titled 'grid title' The horizontal axis is signed "X" across the body. The vertical axis is signed "Y" up and down. title 'Y-axis' Any titles would be signed in most cases, or fingerspelled when necessary.