



ELD STANDARDS FRAMEWORK FOR DEVELOPING THE LANGUAGE OF MATH GRADES 4-5

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SECTION 1: ELD STANDARDS FRAMEWORK FOR DEVELOPING THE LANGUAGE OF MATH GRADES 4-5 - OVERVIEW

Section 1: Purpose

The **purpose of the English Language Development (ELD) Standards Framework and Instructional Guidance documents** is to provide clarity in the implementation and integration of the Nevada ELD Standards with Nevada Academic Content Standards and instruction. In addition, they support the application of the Nevada Educator Performance Framework (NEPF) Standards of best practices for English learners and other diverse student populations.

These Nevada ELD Standards documents specify the connection between the WIDA ELD Standards and the content disciplinary practices of mathematics. The practices identified in this document were created within the Common Core State Standards (CCSS) for Mathematics. The ELD Standards Instructional Guidance documents conceptualize the Nevada ELD Standards as intertwined with learning the Nevada Academic Content Standards and College and Career Readiness Standards.

Section 1: [Overview Document](#) (Hyperlink)

Section 2: [Framework for Developing the Language of MATH](#)

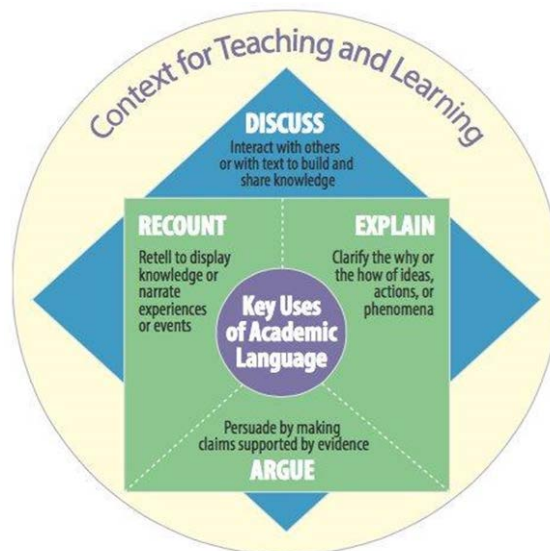
- A. Student Moves: Language Use Expectations
- B. Teacher Moves: Supports for Processing, Producing, and Collaborating in the Language of the Content
- C. Teacher Moves: Supports for Collaborating in the Academic Language

Section 3: [Instructional Guidance: Mathematical Practices](#)

- A. **Summary: Content Disciplinary Practices and Example Tasks**
- B. **Language Arts Disciplinary Practices**
 - Practice 1: Make sense of problems and persevere in solving them
 - Practice 2: Reason abstractly and quantitatively
 - Practice 3: Construct viable arguments and critique the reasoning of others
 - Practice 4: Model with mathematics
 - Practice 5: Use appropriate tools strategically
 - Practice 6: Attend to precision
 - Practice 7: Look for and make use of structure
 - Practice 8: Look for and express regularity in repeated reasoning

Section 1: Key Uses of Academic Language

These purposes, referred to as **Key Uses**, were identified based on reviews of literature and a language analysis of college and career readiness standards:



KEY USES	KEY USES DESCRIPTION
RECOUNT	To display knowledge or narrate experiences or events. Example tasks for the Key Use of Recount include telling or summarizing stories, producing information reports, and sharing past experiences.
EXPLAIN	To clarify the “why” or the “how” of ideas, actions, or phenomena. Example tasks for the Key Use of Explain include describing life cycles, sharing why or how things work, stating causes and effects, and sharing results of experiments.
ARGUE	To persuade by making claims supported by evidence. Example tasks for the Key Use of Argue include stating preferences or opinions and constructing arguments with evidence.
DISCUSS	To interact with others to build meaning and share knowledge. Example tasks for the Key Use of Discuss include participating in small or large group activities and projects.

SECTION 2: ELD STANDARDS FRAMEWORK FOR DEVELOPING THE LANGUAGE OF MATH GRADES 4-5

Section 2A: Student Moves: Language Use Expectations

TASK SAMPLES from the *WIDA Can Do Descriptors, Key Uses Edition* show us that toward the end of a given level of English language proficiency, and with instructional support, **English learners can process or produce...**

Language Domains	Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
Receptive Listening & Reading	<p>With appropriate visual, graphic or interactive support students can...</p> <ul style="list-style-type: none"> • Mark position/location of numbers or illustrated objects from oral commands. • Identify comparative quantities of numbers or illustrated objects from oral commands or questions. • Identify large whole numbers from pictures or models and phrases or short sentences. • Match words or phrases related to estimation to estimate word banks of varying quantities. 	<p>With appropriate visual, graphic or interactive support, as necessary, student can...</p> <ul style="list-style-type: none"> • Match general and some specific language associated with descriptive statistics to illustrated oral examples. • Discriminate between different meanings of language associated with descriptive statistics from illustrated oral discourse. • Sort examples of large whole numbers from pictures or models and text (e.g., those more than or less than one thousand). 	<ul style="list-style-type: none"> • Distinguish between language of estimation sentences (e.g., “I have almost one dollar.”) and language of precision (“I have one dollar.”) in illustrated sentences. • Apply technical language related to descriptive statistics to grade-level oral scenarios (e.g., “mean,” “mode,” “median,” “range”). • Match situations to use of large whole numbers from grade-level text.

Section 2A: Student Moves: Language Use Expectations (continued)

TASK SAMPLES from the *WIDA Can Do Descriptors, Key Uses Edition* show us that toward the end of a given level of English language proficiency, and with instructional support, **English learners can process or produce...**

Language Domains	Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
Productive Speaking & Writing	<p>With appropriate visual, graphic or interactive support students can...</p> <ul style="list-style-type: none"> • State words in figures or formulas from illustrated examples. • Use general vocabulary in math sentences from illustrated examples. • Reproduce names of three-dimensional shapes from labeled models. • Make lists of real-world examples of three-dimensional shapes from labeled models. 	<p>With visual, graphic or interactive support, as necessary, student can...</p> <ul style="list-style-type: none"> • Relate multiple uses of specific vocabulary in illustrated math sentences. • Paraphrase illustrated math sentences using specific or technical vocabulary. • Compare/contrast attributes of three-dimensional shapes from labeled models or charts (e.g., “A__ is like a__ because __.”). 	<ul style="list-style-type: none"> • Explain different ways of problem solving grade-level examples using specific or technical vocabulary. • Incorporate descriptions of three-dimensional shapes into real-world situations.

Section 2B: Teacher Moves: Supports for Processing and Producing Language

What general supports can teachers provide to students at different language proficiency levels to process or produce academic language in all language domains? (See the [Go to Strategies Matrix](#), page 19.)

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
<ul style="list-style-type: none"> • Build background in key language and concepts. • Provide explicit instruction and practice in key social and instructional vocabulary. • Model orally the academic language and specific vocabulary. • Provide explicit instruction and practice for students to construct the language using sentence and discourse starters and visual aids from the text. • Use physical gestures to accompany oral directives. • Label visuals and objects with target vocabulary. • Introduce cognates to aid comprehension. • Give two step contextualized directions. • Restate/rephrase and use Patterned Oral Language routines. • Preview the text content with pictures, demos, charts, or experiences. • Use K-W-L charts before reading. • Pair students to read one text together. • Preview text with a Picture Walk. • Provide a list of important concepts on a graphic organizer. • Use Shared Reading and/or simplify the text. • Provide a content vocabulary Word Bank with non-linguistic representations. 	<ul style="list-style-type: none"> • Build background in key language and concepts. • Model orally the academic language and specific vocabulary. • Provide explicit instruction and practice for students to construct the language using sentence and discourse starters and visual aids from the text. • Provide a system for students to record and process key academic and content- specific vocabulary. • Check Comprehension of all students frequently. Use Wait Time. • Require full sentence responses by asking open ended questions. • Use Varied Presentation Formats such as role plays. • Scaffold oral reports with note cards and provide time for prior practice. • Require the use of academic language. • Require oral reporting for summarizing group work. • Pair students to read one text together. • Use K-W-L charts before reading. • Provide a list of important concepts on a graphic organizer. • Provide a content vocabulary Word Bank with non-linguistic representations. • Use Jigsaw Reading to scaffold independent reading. 	<ul style="list-style-type: none"> • Build background in key language and concepts. • Use complex sentence and discourse starters. • Model orally the academic language and specific vocabulary. • Use Video Observation Guides. • Confirm students’ prior knowledge of content topics. • Ask students to analyze text structure and select an appropriate Graphic Organizer for summarizing. • Use Reciprocal Teaching to scaffold independent reading. • Extend content vocabulary with multiple examples and non-examples.

Section 2C: Teacher Moves: Supports for Collaborating in the Academic Language

How can teachers provide ongoing opportunities for students to collaborate using academic language?

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
<p>Prior to reading, writing, and discussion, Teacher prepares collaborative discourse structures for students to...</p> <ul style="list-style-type: none"> • Engage in pair work (in L1 if possible) to prepare questions for discussion using graphic, interactive, and/or language supports. • Participate in pair/triad/small group discussions using graphic, interactive, and/or language supports (including L1 as appropriate). • Use Clock Buddies. • Use Numbered Heads Together. • Use Think-Pair-Share Squared. • Use key sentence frames for pair interactions • Participate with Strategic Partners at a higher English proficiency level and/or with same primary language peer(s). • Use a Roving Chart in small group work • Use Interactive Journals • Use Think-Write-Pair Share • Use Cloze sentences with a Word Bank • Use dialogue structures (e.g.): My turn/ your turn; Partner A/Partner B; Collaborative groups 	<p>Prior to reading, writing, and discussion, Teacher prepares collaborative discourse structures for students to...</p> <ul style="list-style-type: none"> • Engage pair work to prepare questions for discussion using graphic, interactive, and/or language supports as needed. • Contribute to pair/triad/small group discussions by supporting with examples, asking clarifying questions, and using graphic, interactive, and/or language supports as needed. • Engage with whole/large group discussions by connecting ideas with supporting details, generating original questions, and using graphic, interactive, and/or language supports as needed • Use Graphic Organizers or notes to scaffold oral retelling • Use Think-Pair-Share • Repeat and expand their responses and other students' responses in a Collaborative Dialogue • Use dialogue structures (e.g.): My turn/ your turn; Partner A/Partner B; Collaborative groups 	<p>Prior to reading, writing, and discussion, Teacher prepares collaborative discourse structures for students to...</p> <ul style="list-style-type: none"> • Engage in structured pair work to process • information and formulate thinking, then prepare questions for discussion • Contribute to pair/triad/small group discussions to share individual ideas and compare with other ideas in the group, using graphic, interactive, and/or language supports as needed • Engage with whole/large group discussions by generating original questions and/or building on the ideas of others using graphic, interactive, and/or language supports as needed • Use oral reporting for summarizing group work • Use dialogue structures (e.g.): My turn/ your turn; Partner A/Partner B; Collaborative groups

SECTION 3: INSTRUCTIONAL GUIDANCE
for English Language Development in the Content Area of
MATH Practices Grades 4-5

SECTION 3: INSTRUCTIONAL GUIDANCE: MATH PRACTICES GRADES 4-5

Section 3A: Summary: Content Disciplinary Practices and Example Tasks

Table of example tasks for each practice, with sample proficiency descriptors for each **Key Use of Academic Language**:

Math Practices	Example Tasks	Recount	Explain	Argue	Discuss
1. Make sense of problems and persevere in solving them.	Roger Rabbit	Proficient math students make sense of problems by describing and summarizing their strategies.	Proficient math students explain their mathematical thinking.	See Mathematical Practice 3.	Proficient math students recount , elaborate , and extend the mathematical reasoning of others.
2. Reason abstractly and quantitatively.	Barnyard	Proficient math students restate the mathematical reasoning of others.	Proficient math students explain their mathematical thinking.	See Mathematical Practice 3.	Proficient math students elaborate , and extend the mathematical reasoning of others.
3. Construct viable arguments and critique the reasoning of others.	Roger Rabbit	Proficient math students convey clear and precise arguments.	Proficient math students explain their mathematical thinking.	Proficient math students justify , persuade , and rationalize their use of strategies and communicate them to others using evidence. They also respond and evaluate the mathematical reasoning of others using evidence.	Proficient math students recount , elaborate , and extend the mathematical reasoning of others.
4. Model with mathematics.	Tiling Pool	Proficient math students restate the mathematical reasoning of others.	Proficient math students explain their mathematical thinking.	See MP3.	Proficient math students recount , elaborate on , and extend the mathematical reasoning of others.

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Math Practices	Example Tasks	Recount	Explain	Argue	Discuss
5. Use appropriate tools strategically.	Nine People in a Room	Proficient math students select and use appropriate tools aligned to the mathematical task and describe why they use it	Proficient math students explain their mathematical thinking.	See MP3.	Proficient math students recount, elaborate, and extend the mathematical reasoning of others.
6. Attend to precision.	Roger Rabbit	Proficient math students use precise mathematical language.	Proficient math students elaborate by using precise mathematical vocabulary and math specific discourse.	See MP3.	Proficient math students recount, elaborate, and extend the mathematical reasoning of others.
7. Look for and make use of structure.	Roger Rabbit	Proficient math students identify and describe mathematical structures.	Proficient math students explain their mathematical thinking.	See MP3.	Proficient math students recount, elaborate, and extend the mathematical reasoning of others.
8. Look for and express regularity in repeated reasoning.	Roger Rabbit	Proficient math students identify and describe repeated reasoning and evaluate the reasonableness of intermediate results.	Proficient math students explain their mathematical thinking.	See MP3.	Proficient math students recount, elaborate, and extend the mathematical reasoning of others.

Section 3B: Math Disciplinary Practices (Sample Math Practice 1 of 8)

Practice 1a: Make Sense of Problems and Persevere in Solving Them – Teacher Moves

Teacher Moves: What supports can teachers provide students at different proficiency levels to use language to interpret or make meaning of the content? Examples:

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
<ul style="list-style-type: none"> • Provide scaffolded tasks for students to draw a picture of their solution and to label it. • Model the language of mathematical expression examples, and then provide the task for students to label the mathematical expressions; have students state the academic vocabulary associated with the number or illustrated expression with a predetermined learning partner. • Provide simple sentence frames for students to emulate/copy basic content provided with a predetermined learning partner. For example: I used _____ to solve the problem. My first step was _____. • Students record academic vocabulary on the Mathematically Speaking Task Template with L1 (primary language) translation or non-linguistic representation. <p>(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)</p>	<ul style="list-style-type: none"> • Provide learning tasks in which students can use illustrations or numbers to explain their understandings. • Model consistently a predetermined dialogue structures for students to state and clarify their reasoning to a partner or small group and listen to the ideas of others to agree or disagree with reasons to ensure the participation of all students. • Provide students with sentence starters from a leveled list of scaffolding statements. For example: I solved the problem by _____. I first _____. Then I _____. Finally I _____. (To describe their process.) I think _____ because _____. What do you know? What do you need to find out? <p>(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)</p>	<ul style="list-style-type: none"> • Provide learning tasks in which students can use illustrations or numbers to explain their understandings. • Model consistently predetermined dialogue structures for students to state and clarify their reasoning to a partner or small group and listens to the ideas of others to agree or disagree with reasons to ensure the participation of all students. • Provide students with sentence starters from a leveled list of scaffolding statements. For example, In order to solve the problem, I _____. Information that I need is _____ because _____. The best solution is _____ because _____. What would be sensible to try? Why? <p>(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)</p>

Section 3B: Math Disciplinary Practices (continued)

Practice 1b: Make Sense of Problems and Persevere in Solving Them – Success Criteria

Success Criteria: How will students be able to **communicate or demonstrate** their learning of language and content in at **different language proficiency levels**? Examples:

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
<p style="text-align: center;">Success Criteria</p> <p>Students will...</p> <ul style="list-style-type: none"> • Solve problems and identify the associated academic vocabulary on Exit Slips and other formal or informal assessments. • Describe steps to solve problems using pictures, symbols, or artifacts. <p>(NEPF – IP.1.3; 2.2; 3.4; 5.3)</p>	<p style="text-align: center;">Success Criteria</p> <p>Students will...</p> <ul style="list-style-type: none"> • Orally explain and produce a graphic representation (illustration or numbers) of their strategy for solving problems. • State some specific and technical academic vocabulary in their explanation and justification of one of the preferred student strategies. <p>(NEPF – IP.1.3; 2.2; 3.4; 5.3)</p>	<p style="text-align: center;">Success Criteria</p> <p>Students will...</p> <ul style="list-style-type: none"> • Orally explain, justify, and defend their problem solving strategies. • Use specific and technical academic vocabulary in their explanation, justification, and defense of one of the preferred student strategies. <p>Assessment Tool! Assessing the 8 Mathematical Practices Rubric</p> <p>(NEPF – IP.1.3; 2.2; 3.4; 5.3)</p>