ELD STANDARDS FRAMEWORK FOR DEVELOPING THE LANGUAGE OF MATH GRADES 6-8

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SECTION 1: ELD STANDARDS FRAMEWORK FOR DEVELOPING THE LANGUAGE OF MATH GRADES 6-8 - 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 multilingual 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.

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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
NARRATE	Highlights language to convey real or imaginary experiences through stories and histories. Example tasks for the Key Use of **Narrate** include telling or summarizing stories, sharing past experiences, recounting an incident, or to chronicle a report.
INFORM	Highlights language to provide factual information, to tell, give knowledge, apprise, notify, to make aware of ideas, actions, or phenomena. Example tasks for the Key Use of **Inform** include defining, describing, comparing, contrasting, categorizing, or classifying concepts, ideas, or phenomena.
EXPLAIN	Highlights language to give an account for how things work or why things happen to clarify ideas, actions, or phenomena. Example tasks for the Key Use of **Explain** include interpreting, elaborating, illustrating, simplifying ideas, actions, or phenomena.
ARGUE	Highlights language to justify claims using evidence and reasoning, constructing arguments with evidence, or stating preferences or opinions. Example tasks for the Key Use of **Argue** include advancing or defending an idea or solution, changing the audience's point of view, or evaluating an issue.
DISCUSS	Highlights language to interact with others to build meaning and to share knowledge. Example tasks for the Key Use of **Discuss** includes participating in small or large group activities and projects. **Discuss** can be found in Standard 1: Language of Social and Instructional Purposes of the WIDA 2002 Standards Framework.

SECTION 2: ELD STANDARDS FRAMEWORK FOR DEVELOPING THE LANGUAGE OF MATH GRADES 6-8

Section 2A: Student Moves: Language Expectations

With appropriate instructional support (visual, graphic, and interactive), multilingual learners can…

Language Domains	Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
Interpretive: Listening, Reading, & Viewing	• **Identify** language of basic components of coordinate planes, graphs or equations from figures and oral statements. • **Compare** angles from figures and oral commands. • **Identify** basic components of multi-dimensional shapes from visually supported words or phrases. • **Pair** descriptions of multi-dimensional shapes or their components with visually supported sentences.	• **Match** specific language of complex graphs, equations or coordinate planes with figures and detailed oral descriptions. • **Compare/contrast** graphs, equations or coordinate planes from figures and oral scenarios using some technical language. • **Compare/contrast** multi-dimensional shapes or arguments within visually supported text. • **Match** specific and some technical language associated with components of geometric arguments, constructions or shapes to visually supported text.	• **Analyze** graphing techniques, graphical models or equations from oral reading of grade-level material (e.g., best fit lines, connections between multiple representations). • **Analyze** and **defend** geometric arguments, theorems or shapes (e.g., examples v. proofs).

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

With appropriate instructional support (visual, graphic, and interactive), multilingual learners can…

Language Domains	Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
Expressive: Speaking, Writing, & Representing	• **Name** variables from illustrations and notation. • **Relate** functions of two variables from illustrations and notation. • **Produce** elements of equations or formulas from word/phrase banks and models (e.g., labeling diagrams). • **Describe** equations or formulas using figures and notation from word/phrase banks and models.	• **State** examples of representations of functions of two variables from illustrations and notation. • **Interpret** representations of functions of two variables with or without visual support. • **Sequence** steps from solving problems involving equations or formulas using figures, notation, and sequential language. • **Explain** uses of equations or formulas using figures, notation, and complex sentences.	• **Analyze** functions of one variable in relation to another (e.g., rates of change, intercepts, zeros, asymptotes). • **Summarize** procedures for solving problems involving formulas and equations (e.g., geometry problems involving algebra).

Section 2B: Teacher Moves: Supports for Developing Interpretive and Expressive Language

What general supports can teachers provide to students at **different language proficiency levels** to interpret and express **academic language** in all language domains?

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
● **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 v**isuals and objects with target vocabulary. ● **Introduce** cognates to aid comprehension. ● **Give** two step Contextualized directions. ● **Restate/rephrase** and **use** Patterned Oral Language routines. ● **Use** Wait Time before and after questions**.** ● **Provide** a list of important concepts on a graphic organizer. ● **Provide** a content vocabulary Word Bank with non-linguistic representations. ● **Provide** opportunities for translanguaging and multilingual support during the task.	● **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. ● **Ask** open-ended questions and require full sentence responses. ● **Require** the use of academic language. ● **Provide** a list of important concepts on a graphic organizer. ● **Provide** a content vocabulary Word Bank with non-linguistic representations. ● **Provide** opportunities for translanguaging and multilingual support during the task.	● **Build** background in key language and concepts. ● **Use** complex sentence and discourse starters. ● **Model** orally the academic language and specific vocabulary. ● **Confirm** students' prior knowledge of content topics. ● **Extend** content vocabulary with multiple examples and non-examples. ● **Provide** opportunities for translanguaging during the task. ● Provide tasks that encourage discourse and then facilitate and support discourse between and among students.

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)
Prior to reading, writing, and discussion, Teacher prepares collaborative discourse structures for students to… ● **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 the same primary language peer(s). ● **Use** Cloze sentences with a Word Bank. ● **Use dialogue structures** (e.g.): My turn/ your turn; Partner A/Partner B; Collaborative groups. ● Model and encourage students to build upon their own ideas and those of others in shared languages.	**Prior to reading, writing, and discussion**, Teacher prepares collaborative discourse structures for students to… ● **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** 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. ● Model and encourage students to build upon their own ideas and those of others.	**Prior to reading, writing, and discussion**, Teacher prepares collaborative discourse structures for students to… ● **Engage in structured pair work** to process. ● **Inform 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. ● Model and encourage students to build upon their own ideas and those of others.

SECTION 3: INSTRUCTIONAL GUIDANCE

for English Language Development in the Content Area of Mathematical Practices Grades 6-8

SECTION 3: INSTRUCTIONAL GUIDANCE: MATH PRACTICES GRADES 6-8

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**: **(For a complete continuum of grade-level Proficiency Level Descriptors to support mastery of content area standards, see WIDA ELD Standards 2020)**
WIDA English Language Development Standards Framework, 2020 Edition Kindergarten - Grade 12 (wisc.edu)

Math Practices	Example Tasks	Inform	Explain	Argue	Discuss
1. **Make** sense of problems and persevere in solving them.	Diminishing Return | Inside Mathematics	Proficient students can **make sense** of problems by **summarizing** their knowledge of ratio reasoning in sharing solutions with others using first person (I, We) to describe approach, third person to describe approach with neutral stance of authority.	Proficient students can **explain** their strategy to solve a mathematical task by stating reasoning used to generate a solution through causal connectors to express reasoning (We took these steps to solve problems with ratios because…).	Proficient students can **justify** and **defend** their strategy to solve a mathematical task through evidence and mathematical facts through conditional structures (if/then, when) to demonstrate conclusions.	Proficient students can **elaborate**, and **extend** the mathematical reasoning of others by utilizing everyday, cross-disciplinary, and technical language.
2. **Reason** abstractly and quantitatively.	Properties of Real Numbers/Solve Linear Equations Task Details: Sammy's Chipmunk and Squirrel Observations	Proficient students can **reason** abstractly and quantitatively by introducing concepts through relating verbs (belong to, are part of, be, have) to **describe** their problem-solving strategy used in a mathematical task to solve a linear equation.	Proficient students can **explain** their strategy to solve a mathematical task by stating reasoning used to generate a solution through causal connectors (We took these steps to solve the problem of how many acorns the chipmunk hid…).	Proficient students can **justify** their use of strategies and communicate them to others using mathematical facts through technical nouns and noun groups to add precision and details (one-variable equations).	Proficient students can **elaborate** and **extend** the mathematical reasoning of others by evaluating and critiquing the arguments to engage with others (I don't think you can…; I think you have to use this…).

Math Practices	Example Tasks	Inform	Explain	Argue	Discuss
3. **Construct** viable arguments and critique the reasoning of others.	Dan's Division Strategy	Proficient students can **introduce** and **convey** mathematical concepts through verbs (belong to, are part of, be, have) to analyze strategies to produce clear and precise arguments that the strategies used will work in all similar problems.	Proficient students can **explain** their strategy to solve a mathematical task by stating reasoning used to generate a solution through causal connectors to express reasoning (We took these steps to solve the problem because…).	Proficient students can… • **justify** and **persuade** others in their use of strategies through models, equations, drawings to demonstrate principles along with conditional structures (if/then, when) to demonstrate conclusions. • **evaluate and critique others' arguments** through questions (what, how, why) requests - (could, would) to request information, clarification, procedure (Could you show me how you got that answer? Why did you do… instead	Proficient math students **recount**, **elaborate**, and **extend** the mathematical reasoning of others by utilizing everyday, cross-disciplinary, and technical language.
4. **Model** with mathematics.	Sale!	Proficient students can share solutions with others by **describing** the approach in the model to solve a mathematical problem using first person (I, We) or third person to describe the approach with a neutral stance of authority.	Proficient students can **explain** problem-solving strategies through visual displays (tables, data charts, formula calculations) to clarify the approach and solution to solve a mathematical task.	Proficient students can **justify** and **defend** their use of strategies through conjecture using conditional conjunctions (if or when) to make and justify conjecture. (If I find the discounts of…; The discounts show…).	Proficient students can **recount, elaborate**, and **extend** the mathematical reasoning of others by evaluating and critiquing through questions (what, how, why, do) requests (could, would) to request information, clarification, procedure (Could you show me how you got that answer? Why did you do … instead of …?

Math Practices	Example Tasks	Inform	Explain	Argue	Discuss
5. **Use** appropriate tools strategically.	Ducklings - Median and Mean	Proficient students can **select** and **use** appropriate tools aligned to the mathematical task and **describe** why they use it by introducing the tool through mathematical terms and phrases to describe median and mean concept, process, or purpose.	Proficient students can **explain** their strategy to solve a mathematical task by stating reasoning used to generate a solution through causal connectors to express reasoning (We took these steps to solve the problem of median and mean because…)	Proficient students can **justify** and **defend** conclusions with evidence and mathematical facts in their use of the tools through conditional structures (if/then, when) to demonstrate conclusions.	Proficient can students **elaborate**, and **extend** the mathematical reasoning of others by evaluating and critiquing others' arguments through questions (what, how, why, do) requests (could, would) to request information, clarification, procedure (Could you show me how you got that answer? Why did you do … instead of … ?
6. **Attend** to precision.	Compare Freezing Points	Proficient students can **describe** and **summarize** using mathematically correct language and symbols through passive voice verbs to explain. (This variable is given a value of…)	Proficient students can **elaborate** by introducing entities through mathematical terms and phrases to describe concepts (freezing point, temperature).	Proficient students can **justify** conclusions with evidence and mathematical facts through models, drawings, graphs to demonstrate principles.	Proficient students can **recount**, **elaborate**, and **extend** the mathematical reasoning of others utilizing everyday, cross-disciplinary, and technical language.

Math Practices	Example Tasks	Inform	Explain	Argue	Discuss
7. **Look** for and make use of structure.	Find the Missing Angle	Proficient students can **identify** and **describe** mathematical structures by introducing concepts through mathematical terms and phrases (auxiliary lines, parallel, perpendicular, angles, triangles).	Proficient students can **explain** their strategy to solve a mathematical task through passive voice verbs to show or analyze. (The angle is given a value of …).	Proficient students can **justify** and **defend** conclusions with evidence and mathematical facts through conditional structures (If/then, when) to identify and make use of structures (auxiliary lines, parallel, perpendicular, angles, triangles) to solve a mathematical task.	Proficient students can **recount, elaborate**, and **extend** the mathematical reasoning of others by evaluating and critiquing others' arguments through questions (what, how, why) requests (could, would) to request information, clarification, procedure (Could you show me how you got that answer?)
8. **Look** for and express regularity in repeated reasoning.	Extending the Definition of Exponents, Variation 1	Proficient students can **identify** and **describe** repeated reasoning of intermediate results by sharing solutions with others through generalized nouns to add precision to discussion (distributions, probability, frequencies).	Proficient students can **explain** their strategy to solve a mathematical task through visual data displays (tables, data charts) to clarify approach and/or solution (repeated reasoning, generalizations, patterns),	Proficient students can **generalize** logic across cases through declarative statements to present generalizable processes (The equation…can be used to find any value in the pattern).	Proficient students can **recount**, **elaborate**, and **extend** the mathematical reasoning of others through causal connectors (so, because, therefore) to identify misconceptions (The pattern is…)

Distribution of Math Key Language Uses in Grades 6-8				
WIDA ELD STANDARD	Narrate	Inform	Explain	Argue
1. Language for Mathematics	○	◐	●	●

● Most Prominent ◐ Prominent ○ Present

Adapted from the WIDA 2020 Standards Framework p. 290-292

Section 3B: Math Disciplinary Practices

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)
• **Provide** scaffolded tasks for students to draw a picture of the problem and of their solution and label it. • **Provide** simple patterned oral and written sentence frames for students to **emulate/copy** basic content provided with a predetermined learning partner. • **Model** the language of mathematical expressions for students to **label** the mathematical expressions with a predetermined learning partner; have students **state** the academic vocabulary associated with the number or illustrated expression. • **Provide** sentence frames or sentence starters for students to use to access group discussion. **For example:** My answer makes sense because _____. I hadn't thought about _____. Can you please repeat that? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**	• **Provide** learning tasks in which students can **use illustrations or numbers** to **explain** their understanding of problems and strategies for solutions. • **Model** consistently a predetermined dialogue structure 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? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**	• **Provide** learning tasks in which students can **use illustrations or numbers** to **explain** their understanding. • **Model** consistently predetermined dialogue structures for students to **state** and **clarify** their reasoning while providing evidence to a partner or small group. **Listen** to the ideas of others and then agree or **disagree** by providing reasons to ensure the participation of all students. • **Provide** students with **sentence starters** from a list of statements using more complex language. **For example:** In this problem, I noticed that _____. In order to solve the problem, I _____. Information that I need is _____ because _____. The best way to solve this problem is _____ because _____. What would be sensible to try? Why? Does this strategy/solution make sense? Why? Why Not? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**

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 at **different language proficiency levels**? Examples:

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
Success Criteria **With prompting and supports, students will…** ● **Solve problems** and **identify** the associated **academic vocabulary** on Exit Slips and other formal or informal assessments. ● **Describe** steps used to solve problems and inform others using words, pictures, symbols, or artifacts. **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**	**Success Criteria** **With appropriate supports, students will...** ● **Orally explain, produce and label a graphic representation (illustration or number) illustrating their strategy for solving problems.** ● **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. **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**	**Success Criteria** **With appropriate supports, students will...** ● Orally **explain, justify**, and **defend** their problem-solving strategies and solutions. ● **Use specific** and **technical academic vocabulary** in their **explanation, justification,** and **defense** of one of the preferred student strategies. **Assessment Tool** Assessing the 8 Mathematical Practices Rubric **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**

Section 3B: Math Disciplinary Practices (continued)

Practice 2a: Reason Abstractly and Quantitatively – 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)
● **Provide** scaffolded tasks for students to draw a picture of their solution and to label it. ● **Provide** simple patterned oral and written sentence frames for students to **emulate/copy** basic content provided with a predetermined learning partner. ● **Model** the language of mathematical expressions for students to **label** the mathematical expressions with a predetermined learning partner; have students **state** the academic vocabulary associated with the number or illustrated expression. ● **Provide** sentence frames or sentence starters for students to use to access group discussion. **For Example:** The numbers I can use to represent this problem are _____. ● Questions for students: What is the problem asking you to figure out? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**	● **Provide** learning tasks in which students can **use illustrations or numbers** to **explain** their understanding. ● **Model** a predetermined dialogue structure 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 know _____ because _____. I learned _____. ● Questions for students: What do the numbers in the problem represent? What do the words in the problem mean? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**	● **Provide** learning tasks in which students can **use illustrations or numbers** to **explain** their understanding. ● **Model** consistently 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:** A different way to find the answer is _____. I noticed that _____. **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**

Section 3B: Math Disciplinary Practices (continued)

Practice 2b: Reason Abstractly and Quantitatively – Success Criteria

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

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
Success Criteria **With prompting and supports, students will…** ● **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. **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**	**Success Criteria** **With appropriate supports, students will…** ● **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. **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**	**Success Criteria** **With appropriate supports, students will…** ● 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. **Assessment Tool** Assessing the 8 Mathematical Practices Rubric **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**

Section 3B: Math Disciplinary Practices (continued)

Practice 3a: Construct Viable Arguments and Critique the Reasoning of Others – 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)
• **Provide** scaffolded tasks for students to draw a picture of their solution and to label it. • **Provide** simple patterned oral and written sentence frames for students to **emulate/copy** basic content provided with a predetermined learning partner. • **Model** the language of mathematical expressions for students to **label** the mathematical expressions with a predetermined learning partner; have students **state** the academic vocabulary associated with the number or illustrated expression. • **Provide** sentence frames or sentence starters for students to use to access group discussion. **For example:** How do you know that? My answer is _____. My solution is _____. I think my error is here (point). • Questions to ask students: Why did you decide to do it that way? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**	• **Provide** learning tasks in which students can **use illustrations or numbers** to **explain** their understanding. • **Model** a predetermined dialogue structure 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 used this strategy because _____. My answer is correct because _____. Your answer is incorrect because _____. • Questions to ask students: Can you explain how or why you did this? Why do you think ____ did ____? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**	• **Provide** learning tasks in which students can **use illustrations or numbers** to **explain** their understanding. • **Model** consistently 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 agree/disagree with you because_____. I wonder if _____. I did this because _____. I think this is where you made your error _____ because _____. I can justify my answer by _____. • Questions to ask students: How do you know that? Do you agree with Johnny's answer? Why? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**

Section 3B: Math Disciplinary Practices (continued)

Practice 3b: Construct Viable Arguments and Critique the Reasoning of Others – Success Criteria

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

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
Success Criteria **With prompting and supports, students will…** ● **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. **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**	**Success Criteria** **With appropriate supports, students will…** ● **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. **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**	**Success Criteria** **With appropriate supports, students will…** ● 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. **Assessment Tool** Assessing the 8 Mathematical Practices Rubric **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**

Section 3B: Math Disciplinary Practices (continued)

Practice 4a: Model with Mathematics – 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)
• **Provide** scaffolded tasks for students to draw a picture of their solution and to label it. • **Model** the language of mathematical expressions for students to **label** the mathematical expressions with a predetermined learning partner; have students **state** the academic vocabulary associated with the number or illustrated expression. • **Provide** sentence frames or sentence starters for students to use to access group discussion. **For example:** I drew _____. The graph shows _____. My answer is correct because I used the _____ model. • Questions to prompt students: Is this an example of a model? How would you use this model? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**	• **Provide** learning tasks in which students can **use illustrations or numbers** to **explain** their understanding. • **Model** a predetermined dialogue structure 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 used this model because _____. I drew _____ because _____. • Questions to prompt students: What picture can you draw to help you? What can we use for a model? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**	• **Provide** learning tasks in which students can **use illustrations or numbers** to **explain** their understanding. • **Model** consistently 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 can explain my solution to others by _____. I have seen this before when _____. • Questions to prompt students: What model did you use? Is there another way to represent that? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**

Section 3B: Math Disciplinary Practices (continued)

Practice 4b: Model with Mathematics – Success Criteria

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

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
Success Criteria **With prompting and supports, students will…** ● **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. **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**	**Success Criteria** **With appropriate supports, students will…** ● **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. **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**	**Success Criteria** **With appropriate supports, students will…** ● 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. **Assessment Tool** Assessing the 8 Mathematical Practices Rubric **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**

Section 3B: Math Disciplinary Practices (continued)

Practice 5a: Use Appropriate Tools Strategically – 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)
• **Provide** scaffolded tasks for students to draw a picture of their solution and to label it. • **Provide** simple patterned oral and written sentence frames for students to **emulate/copy** basic content provided with a predetermined learning partner. • **Model** the language of mathematical expressions for students to **label** the mathematical expressions with a predetermined learning partner; have students **state** the academic vocabulary associated with the number or illustrated expression. • **Provide** sentence frames or sentence starters for students to use to access group discussion. **For example:** The tool I used showed me _____. The best tool to use is _____. • Questions to prompt students: Is this an example of a tool? How would you use this tool? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**	• **Provide** learning tasks in which students can **use illustrations or numbers** to **explain** their understanding. • **Model** a predetermined dialogue structure 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 used this tool because _____. My answer is correct because of the _____ tool I used to solve the problem by doing _____. Questions to prompt students: What can you use to help you solve this problem? Can you tell me more about the tool that you used _____? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**	• **Provide** learning tasks in which students can **use illustrations or numbers** to **explain** their understanding. • **Model** a predetermined dialogue structure 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:** This tool, _____ helps me prove my solution to others by _____. I agree/disagree with _____'s choice ____ tool, but I chose _____ instead/also because _____. I could have used ____ (tool) to _____. • Questions to prompt students: Why did you choose that tool to solve the problem? Is there a better tool that you can use? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**

Section 3B: Math Disciplinary Practices (continued)

Practice 5b: Use Appropriate Tools Strategically – Success Criteria

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

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
Success Criteria **With prompting and supports, students will…** ● **Solve problems** and **identify** the associated **academic vocabulary** on Exit Slips and other formal or informal assessments. ● **Describe** steps to solve problems using an appropriate tool -pictures, symbols, or artifacts. **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**	**Success Criteria** **With appropriate supports, students will…** ● **Solve problems** and **identify** the associated **academic vocabulary** on Exit Slips and other formal or informal assessments. ● **Describe** steps to solve problems using an appropriate tool: pictures, charts, tables, etc. **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**	**Success Criteria** **With appropriate supports, students will…** ● Orally **explain, justify**, and **defend** their problem-solving strategies using an appropriate tool. ● **Use specific** and **technical academic vocabulary** in their **explanation, justification,** and **defense** of one of the preferred student strategies. **Assessment Tool** Assessing the 8 Mathematical Practices Rubric **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**

Section 3B: Math Disciplinary Practices (continued)

Practice 6a: Attend to Precision – 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)
• **Provide** scaffolded tasks for students to draw a picture of their solution and to label it. • **Mode**l the language of mathematical expressions for students to **label** the mathematical expressions with a predetermined learning partner; have students **state** the academic vocabulary associated with the number or illustrated expression. • **Provide** sentence frames or sentence starters for students to use to access group discussion. **For example:** I used the term _____ when working with this problem. I didn't understand _____. The math term_____ means _____. I labeled it _____. • Questions to prompt students: What do you notice? Is there a word you don't understand? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**	• **Provide** learning tasks in which students can **use illustrations or numbers** to **explain** their understanding. • **Model** a predetermined dialogue structure 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 know my answer is accurate because_____. I used the label _____ because_____. • Questions to prompt students: Does your answer need a label in order to be precise? What terms should you use to be precise? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**	• **Provide** learning tasks in which students can **use illustrations or numbers** to **explain** their understanding. • **Model** a predetermined dialogue structure 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 used the mathematical term _____ to explain_____. My answer is _____ rather than _____ because_____. • Questions to prompt students: Can you explain why you used **(significant digits)** for your answer? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**

Section 3B: Math Disciplinary Practices (continued)

Practice 6b: Attend to Precision – Success Criteria

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

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
Success Criteria **With prompting and supports, students will…** ● **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. **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**	**Success Criteria** **With appropriate supports, students will…** ● **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. **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**	**Success Criteria** **With appropriate supports, students will…** ● 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. **Assessment Tool** Assessing the 8 Mathematical Practices Rubric **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**

Section 3B: Math Disciplinary Practices (continued)

Practice 7a: Look For and Make Use of Structure – 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)
• **Provide** scaffolded tasks for students to draw a picture of their solution and to label it. • **Mode**l the language of mathematical expressions for students to **label** the mathematical expressions with a predetermined learning partner; have students **state** the academic vocabulary associated with the number or illustrated expression. • **Provide** sentence frames or sentence starters for students to use to access group discussion. **For example:** I noticed_____. I tried _____. They are similar because_____? • Questions to prompt students: What do you notice? Is there a pattern? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**	• **Provide** learning tasks in which students can **use illustrations or numbers** to **explain** their understanding. • **Model** a predetermined dialogue structure 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 already know _____ so _____. This reminded me of _____. • Questions to prompt students: Have you done a similar type of problem before? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**	• **Provide** learning tasks in which students can **use illustrations or numbers** to **explain** their understanding. • **Model** a predetermined dialogue structure 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 noticed the connection between_____ and _____. How is _____ related to _____? • Questions to prompt students: What do both problems have in common? What patterns do you see? What do you know about ___ that you can apply to this situation? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**

Section 3B: Math Disciplinary Practices (continued)

Practice 7b: Look For and Make Use of Structure – Success Criteria

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

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
Success Criteria **With prompting and supports, students will…** ● **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. **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**	**Success Criteria** **With appropriate supports, students will…** ● **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. **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**	**Success Criteria** **With appropriate supports, students will…** ● 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. **Assessment Tool** Assessing the 8 Mathematical Practices Rubric **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**

Section 3B: Math Disciplinary Practices (continued)

Practice 8a: Look For and Express Regularity in Repeated Reasoning – 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)
● **Provide** scaffolded tasks for students to draw a picture of their solution and to label it. ● **Provide** simple patterned oral and written sentence frames for students to **emulate/copy** basic content provided with a predetermined learning partner. ● **Model** the language of mathematical expressions for students to **label** the mathematical expressions with a predetermined learning partner; have students **state** the academic vocabulary associated with the number or illustrated expression. ● **Provide** sentence frames or sentence starters for students to use to access group discussion. **For example:** I wonder/noticed_____. Conclusion is _____. ● Questions to prompt students: What do you notice? Is there a pattern? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**	● **Provide** learning tasks in which students can **use illustrations or numbers** to **explain** their understanding. ● **Model** a predetermined dialogue structure 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**: The pattern/rule I noticed was _____ because _____. This is the same because _____. This is true because _____. Based on the information, I can conclude _____. Questions to prompt students: How could this problem help you solve another? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**	● **Provide** learning tasks in which students can **use illustrations or numbers** to **explain** their understanding. ● **Model** a predetermined dialogue structure 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**: If _____ then _____. I generalize that _____. The trend of the data is _____ because _____. ● Questions to prompt students: What generalizations can you make? Can you find a short cut to solve the problem? **(NEPF – IP.1.2; 2.1; 2.2; 3.1; 3.2; 5.3)**

Section 3B: Math Disciplinary Practices (continued)

Practice 8b: Look For and Express Regularity in Repeated Reasoning – Success Criteria

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

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
Success Criteria **With prompting and supports, students will…** ● **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. **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**	**Success Criteria** **With appropriate supports, students will…** ● **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. **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**	**Success Criteria** **With appropriate supports, students will…** ● 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. **Assessment Tool** Assessing the 8 Mathematical Practices Rubric **(NEPF – IP.1.3; 2.2; 3.4; 5.3)**