Supporting English Learners in Math Lessons

Webinar Viewing Guide

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How can classroom teachers support English learners at varying levels of English proficiency during math lessons?

Webinar Objectives:

In this webinar, we will address the following goals:

- Explore the shift in English Language Proficiency (ELP) standards.
- Connect student characteristics to levels of English language proficiency.
- Examine supports for English learners at different levels of English language proficiency.

What you will need:

- A copy of the Math standards
- A copy of the NE ELP standards
- If facilitating this webinar, prepare the card sort at the end of this viewing guide.

REFLECTION: A SHIFT IN STANDARDS

1. How have math standards changed over time since you began teaching?
2. How has the shift in standards affected your teaching?
3. How might this shift affect English learners in the general education classroom?

DEVELOPING LANGUAGE TO COMMUNICATE CONTENT

Taken from: http://elpa21.org/standards-initiatives/elp-standards
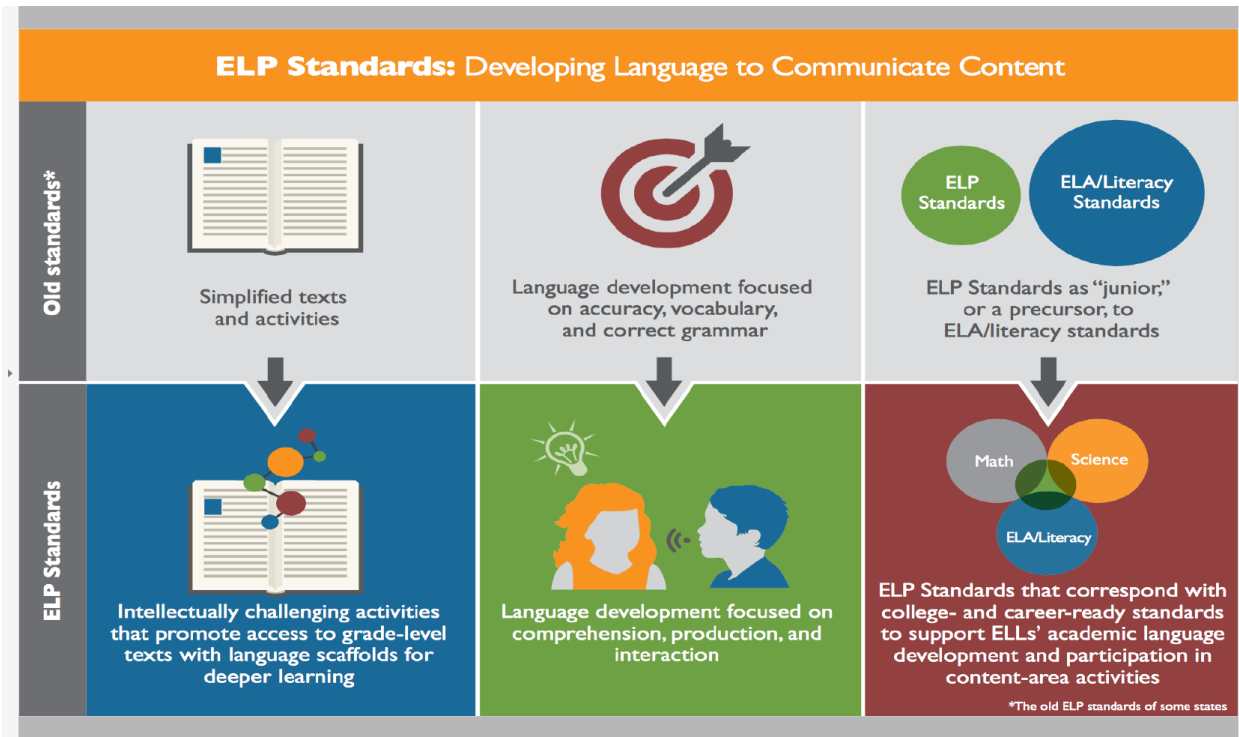
NEBRASKA ENGLISH LANGUAGE PROFICIENCY STANDARDS

Function

1. construct meaning from oral presentations and literary and informational text through grade appropriate listening, reading, and viewing

2. participate in grade-appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions

3. speak and write about grade-appropriate complex literary and informational texts and topics

4. construct grade-appropriate oral and written claims and support them with reasoning and evidence

5. conduct research and evaluate and communicate findings to answer questions or solve problems

6. analyze and critique the arguments of others orally and in writing

7. adapt language choices to purpose, task, and audience when speaking and writing

Form

8. determine the meaning of words and phrases in oral presentations and literary and informational text

9. create clear and coherent grade-appropriate speech and text

10. make accurate use of standard English to communicate in grade-appropriate speech and writing

REFLECTION: ELL & MATH COLLABORATION

1. Discuss any correspondences you see between the new Math and ELP Standards.
2. How might ELL and Math teachers collaborate to help English learners access both sets of standards?

Individual Student Report

How did my student perform on the ELPA21 test?

Test: Grade 6 ELPA21

Year: 2016-2017

Name: Demo, Student

Legend: Domain Performance Levels

❶ Level 1		❷ Level 2	
❸ Level 3		❹ Level 4	
❺ Level 5			

Student Test Performance

Name	SSID	Proficiency Status
Demo, Student	999999999	Progressing

Comparison Scores

Name	Percent Determined Proficient
Demo State	22
Demo District (999)	33
Demo School (9999)	33

Proficiency Determination

Proficient - Students are Proficient when they attain a level of English language skill necessary to independently produce, interpret, collaborate on, and succeed in grade-level content-related academic tasks in English. This is indicated on ELPA21 by attaining a profile of Level 4 or higher in all domains. Once Proficient on ELPA21, students can be considered for reclassification.

Progressing - Students are Progressing when, with support, they approach a level of English language skill necessary to produce, interpret, and collaborate, on grade-level content-related academic tasks in English. This is indicated on ELPA21 by attaining a profile with one or more domain scores above Level 2 that does not meet the requirements to be Proficient. Students scoring Progressing on ELPA21 are eligible for ongoing program support.

Emerging - Students are Emerging when they have not yet attained a level of English language skill necessary to produce, interpret, and collaborate on grade-level content-related academic tasks in English. This is indicated on ELPA21 by attaining a profile of Levels 1 and 2 in all four domains. Students scoring Emerging on ELPA21 are eligible for ongoing program support.

Scale Scores
Scores from different domains have different ranges and should not be directly compared. The same, or similar, scale score on two or more domains might not result in the same performance level on these domains.

Student Performance on Each Domain

Domain	Scale Score	Performance Level	Domain Description
Listening	$577_{\pm 29}$	❺	When listening, the student at Level 5 is working on: determining main idea or ideas and how each idea is supported with evidence; gathering information from multiple oral sources and evaluating the credibility of the information; gathering information from multiple oral sources and evaluating the credibility of the information; quoting or citing examples while paraphrasing data and conclusions; determining the meaning of general academic, context specific, figurative and idiomatic phrases.
Reading	$554_{\pm 21}$	❸	When reading grade-appropriate text, the student at Level 3 is working on: determining the central idea or theme and supporting details; responding to others' comments and answering questions on familiar topics; gathering information from a few sources; using context clues to determin the meanings of general academic and content-specific words and phrases; explaining an author's argument; analyzing the arguments and claims made in text, distinguishing between those that are supported by reasons or evidence and those that are not.
Speaking	$571_{\pm 28}$	❹	When speaking, the student at Level 4 is working on: participating in conversations and discussions with appropriate grammatical structures; recounting a detailed sequence of events with a beginning, middle, and end; summarizing information using simple, compound and complex sentences; supporting main ideas clearly with relevant and specific evidence; deliver oral presentations about a variety of topics and experiences.
Writing	$605_{\pm 26}$	❺	When writing, the student at Level 5 is working on: participating in extended written exchanges on a variety of topics and texts; adding evidence and summarizing ideas; composing narrative and informational texts with relevant details about a variety of topics; constructing a claim, introducing the topic and providing compelling, ordered reasons to support the claim; recounting a complex sequence of events with a beginning, middle, and end; adapting language choices and style to the purpose and audience; precisely expressing ideas while maintaining a consistent style and tone.

A student's score is best interpreted when recognizing that the student's knowledge and skills fall within a score range and not just a precise number. For example, 630 (+/-10) indicates a score range between 620 and 640.

Classroom Supports for Emerging Students during Math Activities

These supports may be appropriate for English learners at all levels of English proficiency but are particularly useful for emerging students just beginning to develop English skills (see description above). Students at this level may need more supports than students at higher levels of proficiency. Generally, supports should be determined on an individual basis and should be removed when no longer needed by the student.

*Emerging students will need support to build **VOCABULARY** knowledge and skills:*

- Pre-teach vocabulary using non-linguistic representations.
- Provide a bilingual list of cognates. Have student identify cognates within the lesson.
- Provide bilingual dictionaries.
- Provide an anchor chart with processes (Ex. FOIL/Factoring)
- Provide word lists/charts with definitions and illustrations.
- Provide a word bank or word wall with pictures.

*Emerging students will need support to promote **DISCOURSE AND ACADEMIC TALK**:*

- Ask Ss questions to guide thinking and engage them in discourse (Ex. "What do you know?" "Can you show me?").
- Allow for sufficient wait time for student to respond in English.
- Provide sentence frames to help Ss communicate thinking.
- Provide multiple opportunities to practice math language:
  - Call backs
  - Pairs/small groups
  - Exit tickets
  - Cooperative learning activities (Ex. Numbered heads together, inside-outside circle, etc.)
- Have student prepare and practice response in writing before sharing out.

*Emerging students will need purposeful **SCAFFOLDS** to access grade-level math content:*

- Provide short video clips of demonstration.
- Provide formulas.
- Provide manipulatives and visuals.
- Provide sentence frames or sentence starters.
- Provide a list of steps and teacher modeling.
- Provide a graphic organizer.
- Use color coding to identify steps and/or words.
- Provide calculators/teach calculator skills.
- Provide skeleton/simplified notes.
- Use online resources to chunk/adjust teaching and build background knowledge.
- Provide extended time for guided practice.
- Support student use of a formula chart or interactive notebook.
- Provide examples with something familiar before moving on to the abstract.
- Provide bilingual support when available.
- Use realia.
- Pair student with a peer throughout entire activity (if possible with a student who has the same native language).

*Emerging students may need the opportunity to **DEMONSTRATE UNDERSTANDING** in different ways:*

- Demonstrate knowledge using multiple representations.
- Have student respond with non-verbal cues (thumbs up/thumbs down).
- In partner work, have student respond through paraphrasing or revoicing.
- Modify assessments or assignments (Ex. Reduce the number of tasks).
- Provide extra time to practice and complete assignments.

Classroom Supports for Progressing Students during Math Activities

These supports may be appropriate for English learners at all levels of English proficiency but are particularly useful for progressing students who are developing grade-level English language skills (see description above). Many of these supports are similar to supports for emerging students but over time may be able to be removed or adjusted as students increase their comprehension and production skills.

*Emerging students will need support to build **VOCABULARY** knowledge and skills:*

- Provide a word list with important terms.
- Identify vocabulary that may have multiple meanings or synonyms.
- Provide an anchor chart with illustrations and definitions.
- Provide bilingual support.

*Emerging students will need support to promote **DISCOURSE AND ACADEMIC TALK**:*

- Provide multiple opportunities to practice math language:
  - Call backs
  - Pairs/small groups
  - Exit tickets
  - Cooperative learning activities (Ex. Numbered heads together, inside-outside circle, etc.)
- Provide sentence frames/sentence starters (for speaking and writing).
- Engage student in academic conversations to develop problem-solving skills.

*Emerging students will need purposeful **SCAFFOLDS** to access grade-level math content:*

- Pair student with a peer.
- Share additional teacher models with student.
- Develop concepts around familiar concepts.
- Provide examples and non-examples.
- Make connections to prior learning.
- Provide time for guided practice.
- Provide manipulatives.
- Guide student use of a formula chart or interactive notebook. Provide formulas, worked out programs, and real life examples for student to add to notebook.
- Provide examples with something familiar before moving on to the abstract.
- Provide bilingual supports when available.
- Provide calculators.
- Provide skeleton notes.
- Provide graphic organizer.
- Use online resources to chunk/adjust teaching and build background knowledge.
- Use color coding to identify steps and/or words.
- Use realia.

*Emerging students may need the opportunity to **DEMONSTRATE UNDERSTANDING** in different ways:*

- Provide additional time to practice with scaffolds before turning in assignment.
- Encourage students to create visual models to represent what's happening in the problem.
- Modify assignments/data.

Classroom Supports for Nearly Proficient Students during Math Activities

These supports may be appropriate for English learners at all levels of English proficiency but are particularly useful for nearly proficient students who are nearing grade-level English language skills (see description above). At this level of proficiency student may need fewer and different types of supports although they may benefit from some of the same supports as other English learners. These supports may also be appropriate for newly proficient students who will need support particularly around academic vocabulary and discourse. Generally, supports should be determined on an individual basis.

*Emerging students will need support to build **VOCABULARY** knowledge and skills:*

- Help students create vocabulary lists (with student illustrations) –or- provide word list with important terms.
- Provide bilingual dictionary/word list.
- Emphasize the use of key vocabulary in complex sentences to help student answer questions.

*Emerging students will need support to promote **DISCOURSE AND ACADEMIC TALK**:*

- Provide sentence frames/sentence starters (for speaking and writing).
- Engage student in academic conversations to develop problem-solving skills.
- Emphasize the use of key vocabulary in complex sentences to help student respond.
- Provide opportunities to talk about math thinking using cooperative learning structures.

*Emerging students will need purposeful **SCAFFOLDS** to access grade-level math content:*

- Use color coding to identify steps and/or academic language.
- Provide manipulatives.
- Provide calculators.
- Provide graphic organizers.
- Partner with a peer.
- Build background knowledge.
- Make connections to prior learning.

*Emerging students may need the opportunity to **DEMONSTRATE UNDERSTANDING** in different ways:*

- Provide more opportunities for student to create his/her own problems and explain reasoning.
- Encourage student to create visual models to represent what's happening in the problem.

INDIVIDUAL PROFICIENCY PROFILES

Student Name	Domain Level (if known)				Proficiency Level	Other student characteristics	Classroom Supports	Evaluation of Supports
	Listening	Reading	Speaking	Writing				

PROFICIENCY LEVEL DESCRIPTIONS FOR ENGLISH LEARNERS

Emerging	Progressing	Nearly Proficient
Students are emerging when : • They are working on tasks related to ELP levels of 1-2. • They are just beginning to develop grade-level English language skills. • They have minimal to limited comprehension in English without support. • They may understand some words and simple sentences but production is limited.	Students are progressing when: • They are working on tasks related to ELP levels 2-3 (maybe some 4s). • They are developing grade-level English language skills. • They have fair to good comprehension in English without support. • They understand and produce more accurate English but may make errors. • They are working towards producing complex English structures in writing or speaking.	Students are nearly proficient when: • They are working on tasks related to ELP levels 3-4 (mostly 4's). • They are nearing grade-level English language skills. • They have strong comprehension in English without support. • They understand and produce accurate English with few errors. • They are mostly producing complex academic language skills.

To complete the card sort during this webinar, cut out the following cards and mix them up. You will need to prepare this before presenting the webinar. The following should be given to the group as the category titles (3). Do not mix these up:

Emerging	Progressing	Nearly Proficient

The following cards include the student characteristics that participants can categorize under the previous categories of emerging, progressing, and nearly proficient. Mix up these cards and have participants categorize and discuss these student characteristics.

Students are working on tasks related to ELP levels of 1-2.	Students are just beginning to develop grade-level English language skills.	Students have minimal to limited comprehension in English without support.	Students may understand some words and simple sentences but production is limited.
Students are working on tasks related to ELP levels 2-3 (maybe some 4s).	Students are developing grade-level English language skills.	Students have fair to good comprehension in English without support.	Students understand and produce more accurate English but may make errors.
Students are working towards producing complex English structures in writing or speaking.	Students are working on tasks related to ELP levels 3-4 (mostly 4's).	Students are nearing grade-level English language skills.	Students have strong comprehension in English without support.
Students understand and produce accurate English with few errors.	Students are mostly producing complex academic language skills.		