## Grades 6-8
## Mathematics
## Framework for FORMATIVE/CLASSROOM Instruction and Assessment
## Receptive Domains of **Listening and Reading**

**Pennsylvania  English Language Proficiency Standard 3**
English language learners communicate information, ideas, and concepts necessary for academic success in the content area of Mathematics**.**

**Pennsylvania Core Standards**

**Speaking and Listening**
**CC.1.5.6.A** Engage effectively in a range of collaborative discussions, on grade-level topics, texts, and issues, building on others' ideas and expressing their own clearly.
**CC.1.5.7.A** Engage effectively in a range of collaborative discussions, on grade-level topics, texts, and issues, building on others' ideas and expressing their own clearly.
**CC.1.5.8.A** Engage effectively in a range of collaborative discussions, on grade-level topics, texts, and issues, building on others' ideas and expressing their own clearly.

**Mathematics**
**CC.2.4.6.B.1** Demonstrate an understanding of statistical variability by displaying, analyzing, and summarizing distributions.
M06.D-S.1.1.1, M06.D-S.1.1.2, M06.D-S.1.1.3, M06.D-S.1.1.4

**CC.2.4.7.B.1** Draw inferences about populations based on random sampling concepts.
M07.D-S.1.1.1, M07.D-S.1.1.2

**CC.2.4.8.B.1** Analyze and/or interpret bivariate data displayed in multiple representations.
M08.D-S.1.1.1, M08.D-S.1.1.2, M08.D-S.1.1.3, A1.2.2.2.1

*The PA ELL Overlays for English Language Arts and Mathematics assist educators in developing instructional units, lessons, or activities that are meaningful and comprehensible for English language learners.  They illustrate the dynamic process of adapting instruction and assessment based on the English language proficiency of students.  The PA ELL Overlays for English Language Arts and Mathematics are models that exemplify adaptations for a select instructional context and provide resources to extend this process to other instructional units.*

## Listening Model Performance Indicator (MPI)

**Classroom Context:** Identify and analyze information related to data, distribution, and random sampling.

**Cognitive Function:** Students at all levels of English proficiency will ANALYZE information related to data, distribution and random sampling.

| Concepts | Competencies | Vocabulary and Topic Related Language | Proficiency Level 1 Entering | Proficiency Level 2 Emerging | Proficiency Level 3 Developing | Proficiency Level 4 Expanding | Proficiency Level 5 Bridging |
|---|---|---|---|---|---|---|---|
| Data, distributions, and random sampling | Determine quantitative measures of center and variability.

Choose the appropriate measure of center and variability for a set of data.

Draw inferences about two populations based on random sampling concepts. | Absolute value

Coefficient

Dependent Variable

Distributive property

Exponent

Greatest common factor

Independent variable

Least common multiple

Mean

Mean absolute deviation

"For example"
"Going forward"
"Clearly" | Connect oral language associated with analyzing data, distributions, or random sampling with visual or graphic displays following explicit, repeated examples, as modeled and monitored by the teacher. | Illustrate or identify examples data, distributions, or random sampling based on oral directions and visual or graphic displays. | Select representations of data, distributions, or random sampling based on visual or graphic displays and oral descriptions of real-life situations. | Make predictions or estimates of data, distributions, or random sampling from oral scenarios and visual or graphic displays. | Make inferences about data, distributions, or random sampling from oral scenarios of grade level materials. |

## Reading Model Performance Indicator (MPI)

**Classroom Context:** Identify and analyze information related to data, distribution, and random sampling.

**Cognitive Function:** Students at all levels of English proficiency will ANALYZE information related to data, distribution and random sampling.

| Concepts | Competencies | Vocabulary and Topic Related Language | Proficiency Level 1 Entering | Proficiency Level 2 Emerging | Proficiency Level 3 Developing | Proficiency Level 4 Expanding | Proficiency Level 5 Bridging |
|---|---|---|---|---|---|---|---|
| Data, distributions, and random sampling | Determine quantitative measures of center and variability.<br><br>Choose the appropriate measure of center and variability for a set of data.<br><br>Draw inferences about two populations based on random sampling concepts. | Absolute value<br><br>Coefficient<br><br>Dependent Variable<br><br>Distributive property<br><br>Exponent<br><br>Greatest common factor<br><br>Independent variable<br><br>Least common multiple<br><br>Mean<br><br>Mean absolute deviation<br><br>"As a result"<br>"Consequently"<br>"In sum" | Recognize vocabulary associated with analyzing data, distributions, or random sampling to graphics, symbols, or figures following explicit, repeated examples, as modeled and monitored by the teacher. | Identify visually supported examples of data, distributions, or random sampling based on visual or graphic displays with a partner. | Classify representations of data based on visual or graphic displays and written descriptions of authentic situations. | Make predictions or estimates of data, distributions, or random sampling from written information and visual or graphic displays. | Make inferences about data, distributions, or random sampling from written scenarios of grade level materials. |

| **Building Receptive Model Performance Indicators (MPI)** to differentiate and scaffold instruction per English language proficiency level by adjusting the *language function* and *support*. | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Classroom Context:** | | | | | | | |
| **Cognitive Function:** Students at all levels of English proficiency will | | | | | | | |
| **Concepts** | **Competencies** | **Vocabulary and Topic Related Language** | **Proficiency Level 1 Entering** | **Proficiency Level 2 Emerging** | **Proficiency Level 3 Developing** | **Proficiency Level 4 Expanding** | **Proficiency Level 5 Bridging** |
| | | | **Language Function** (differentiated measurable expectations of student language use increasing in complexity and amount from English language proficiency level 1 to level 5) | | | | |
| | | | Identify<br><br>Match<br><br>Illustrate | Label<br><br>Graph<br><br>Organize | Construct<br><br>Compare<br><br>Distinguish | Interpret<br><br>Summarize<br><br>Make observations | Draw conclusions<br><br>Hypothesize<br><br>Critique |
| | | | **Content Stem** (selected focus of grade-level curriculum for all students remains constant across all English language proficiency levels) | | | | |
| | | | | | | | |
| | | | **Instructional Support** (scaffolds to accompany explicit instruction with multiple opportunities for student response and feedback decreasing in degree from English language proficiency level 1 to level 5. "I do, We do, You do") | | | | |
| | | | Visual support<br><br>Sensory support<br><br>Realia<br>Video<br><br>Graphic organizers<br><br>Tiered assignments | Visual support<br><br>Sensory support<br><br>Realia<br>Video<br><br>Graphic organizers<br><br>Tiered assignments | Visual support<br><br>Sensory support<br><br>Realia<br>Video<br><br>Graphic organizers<br><br>Tiered assignments | Visual support<br><br>Realia<br><br>Video<br><br>Graphic organizers<br><br>Tiered assignments<br><br>Partner | Visual support<br><br>Video<br><br>Graphic organizers<br>Partner/group work<br><br>Front load vocabulary<br><br>Modeling |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | Partner<br><br>Flexible grouping<br><br>First language support<br><br>Re-teaching/Pre-teaching<br><br>Modeling<br><br>Conferences with teacher | Partner<br><br>Flexible grouping<br><br>First language support<br><br>Re-teaching/Pre-teaching<br><br>Modeling<br><br>Conferences with teacher<br><br>Build background knowledge and connections to topic | Partner<br><br>Flexible grouping<br><br>First language support<br><br>Re-teaching/Pre-teaching<br><br>Modeling<br><br>Conferences with teacher<br><br>Build background knowledge and connections to topic<br><br>Rubrics<br><br>Checklists<br><br>Reciprocal teaching opportunities within groups and the class as a whole | Flexible grouping<br><br>Front load vocabulary<br><br>Modeling<br><br>Conferences with teacher<br><br>Build background knowledge and connections to topic<br><br>Rubrics<br><br>Checklists<br><br>Reciprocal teaching opportunities within groups and the class as a whole | Conferences with teacher<br><br>Build background knowledge and connections to topic<br><br>Rubrics<br><br>Checklists<br><br>Reciprocal teaching opportunities within groups and the class as a whole |