

# Orchestrating Mathematical Discourse with English Learners

| Language Proficiencies                       | Beginner                                                                                                                                                                                                                                                                                                                                                                                               | Intermediate                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                    | Advanced                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                        |
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|                                              | Level 1                                                                                                                                                                                                                                                                                                                                                                                                | Level 2                                                                                                                                                                                                                                                                                                                                                                                                                         | Level 3                                                                                                                                                                                                                                                                                                                                                                                                                            | Level 4                                                                                                                                                                                                                                                                                                                               | Level 5                                                                                                                                                                                                                                                |
| <b>Characteristics of an English Learner</b> | <ul style="list-style-type: none"> <li>• May be familiar with some of the sounds and words of English</li> <li>• Responds to questions by pointing, gesturing, and drawing</li> <li>• May use first language to ask questions</li> </ul>                                                                                                                                                               | <ul style="list-style-type: none"> <li>• Understands and uses basic words, phrases, and commands</li> <li>• Follows conversations independently</li> <li>• Uses better grammar when communicating about mathematics including asking questions and explaining the math</li> </ul>                                                                                                                                               | <ul style="list-style-type: none"> <li>• Participates in discussions about mathematics including asking questions</li> <li>• Uses higher-order language skills to participate in academic discourse</li> <li>• Uses more precise vocabulary with more accuracy</li> </ul>                                                                                                                                                          | <ul style="list-style-type: none"> <li>• Has a deeper understanding of language including mathematics and academic vocabulary</li> <li>• Uses more sophisticated mathematical and academic vocabulary with fewer errors during academic discourse</li> <li>• Seeks clarification</li> </ul>                                           | <ul style="list-style-type: none"> <li>• Uses more complex grammar and vocabulary when participating in academic discourse</li> </ul>                                                                                                                  |
| <b>What English Learners Can Do</b>          | <ul style="list-style-type: none"> <li>• Can use their first language to communicate their thinking and ask questions</li> <li>• Can use visuals to contribute to the conversation</li> </ul>                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>• Can ask questions using simple sentences</li> <li>• Can explain by using gestures and/or pointing at images on their paper</li> <li>• Can use sentence frames to explain their solutions</li> </ul>                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>• Can ask questions and seek clarification using simple sentences</li> <li>• Can describe their process of solving a math problem using simple sentences</li> </ul>                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>• Can ask questions and seek clarification from both the teacher and other students about the content</li> <li>• Can participate in academic discourse and explain their thinking</li> </ul>                                                                                                   | <ul style="list-style-type: none"> <li>• Can sustain a conversation during mathematics discourse</li> <li>• Can also ask questions and seek clarification as needed</li> <li>• Can include both precise mathematics and academic vocabulary</li> </ul> |
| <b>Teacher Support</b>                       | <p align="center"><b>Create a growth mindset classroom by encouraging students to learn from mistakes both in mathematics and language.</b></p>                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                        |
|                                              | <p><b>Establish a nonverbal way for students to ask for clarification (e.g., red/green cards).</b></p> <p><b>Provide simple sentence starters to encourage participation:</b></p> <p>I agree with _____.</p> <p>I disagree with _____.</p> <p><b>Partner students with other students to co-explain their solution.</b></p> <p><b>Have students write their solutions in their first language.</b></p> | <p><b>Have students work with a partner to seek clarification.</b></p> <p><b>Provide sentence starters to help communicate the mathematics using some key math and academic words.</b></p> <p><b>Have students explain how they solved their problem to another student and have them write out the solution for them.</b></p> <p><b>Have students practice saying the steps they used to solve before calling on them.</b></p> | <p><b>Provide students with sentence frames to ask questions and seek clarification.</b></p> <p><b>Provide guidance to ensure students are using correct language.</b></p> <p><b>Have students practice saying the steps they used to solve a problem before calling on them.</b></p> <p><b>Have students work with a partner and practice explaining one portion of the solution before explaining it to the whole class.</b></p> | <p><b>Have students orally explain how they solved their problem.</b></p> <p><b>Restate or recast questions or phrases to model correct English usage during discourse when students ask for clarification or participate in mathematical discourse.</b></p> <p><b>Provide more complex sentence frames that include clauses.</b></p> | <p><b>Encourage students to ask for clarification.</b></p> <p><b>Restate or recast student questions or comments to model correct English usage during discourse.</b></p>                                                                              |