

Do's & Dont's



ENGLISH
LEARNERS
SUCCESS
FORUM

of EL Instruction

SUBJECT

MATH

AREA OF FOCUS

II

III

GUIDELINE

4

8

9

GRADES K-12

Not Less Than, but Equal or Greater Than: *Remote Math Instruction for English Learners*

In response to the COVID-19 crisis in March 2020, the sudden shift to remote learning (and the strong potential for continued remote learning through Fall 2020 and beyond) has posed an enormous challenge for mathematics teachers of all students. There are also a number of specific considerations that teachers of English Learners (ELs) must take into account during the transition to and continued employment of remote instruction and hybrid classroom models. Mathematics teachers are searching for meaningful ways to provide access to core content through prioritizing key concepts, competencies, and practices. At the same time, they are figuring out how to plan for formative assessment, embed ELs' home language in instruction, and determine what instructional supports are needed. When additional instructional supports are needed, the questions become: at what precise times should these supports be provided, and how does one provide them within a remote environment?

Although conditions are far from ideal, there is an opportunity to combine what we already know about teaching ELs with [emerging practices from educators in the field](#) to facilitate **cognitively demanding** math instruction for ELs remotely. Well-designed instruction facilitated by online resources, guided discussion, and teacher support can give students ample opportunities for rigorous content learning and productive struggle.

This resource was developed using research-based strategies for engaging ELs in mathematics instruction, structured interviews with practitioners and experts in the field, and survey data from teachers and administrators across the nation who have transitioned to remote learning for ELs. Each of these steps was imperative to highlight the voices and experiences of educators, and identify common themes specific to math instruction.

Based on the research and ELSF guidelines, we suggest the following:



Design lessons that prompt students to make connections to their homes and families. For example, ask primary grade students to find collections of common household objects to count. Invite middle school students learning about ratios to compare and contrast sets of objects and describe them using ratios and to practice the language of ratios (e.g., 3 windows per room). Encourage students to read, write, listen and speak about mathematics with family members and siblings. Whenever possible, provide core content resources in students' home language.



Don't be afraid to design lessons that require students to use technology in novel ways. They are often adept at figuring out how to use the technology at their disposal. Also, don't allow the lack of familiarity with technology to negatively impact the design of your lessons.



Don't lower the cognitive demand of your lessons. Use grade level concepts to deepen students' understanding of the math they are learning and, in doing so, continue to solidify their unfinished learning.



Featured Authors

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Based on the research and ELSF guidelines, we suggest the following:

<p> Use formative assessments to inform and adjust instruction. Frequently include discussion board posts where students can explain their process for solving a problem and teachers can provide just-in-time scaffolds. Both formative and summative assessments should prompt students to explain their reasoning or justify arguments. Use technology tools (word processing, audio recording, drawing, speech-to-text, or screencasting tools) strategically to comment on students' assignments and provide feedback on how to improve.</p>	<p> Don't assume that ELs cannot do independent work because of limited tools or resources. Provide them with guidance on how to use technology (and other) tools to develop their ability to tackle ever more complex text with independence.</p>
<p> Collaborate and co-teach with your ELD teacher or EL coordinator when possible. Work together to identify the key language demands in each lesson or unit and provide online instructional scaffolds that allow students to access language and content.</p>	<p> Don't simplify or avoid using mathematical language during instruction. Instead, amplify the language by engaging students in using language as a thinking tool and to communicate their reasoning. For example, provide students with sentence stems that allow them to engage in mathematical discourse, and provide just-in-time support; teach vocabulary in context when students stumble over an unfamiliar word.</p>
<p> Know your students, their learning preferences and the technology they have access to. Consider the range of student English language proficiency levels in your class and the language needed to access the content. Use online tools that include hyperlinked academic language connected to glossaries, examples, videos, or interactive graphic organizers to provide scaffolding opportunities in both synchronous and asynchronous online environments.</p>	<p> Don't overburden students with unnecessary math drills, such as timed tests or speed drills. These are only effective for building fluency about well-rehearsed procedures and skills. Also, it communicates the wrong message that what is valued in mathematics is speed automaticity. This may be disheartening at a time when students need positive support to exercise their agency to appreciate their own power to reason.</p>
<p> Engage students in open-ended math discussions. Allow students opportunities to create their own problems, justify arguments, and explain math concepts orally or in writing in your assigned platform. Use mathematics and language development routines that cultivate discussions in pairs and small groups to maximize each student's opportunity to use language for academic purposes. Use whole-group discussions for the purpose of comparing, contrasting, and connecting the variety of ways of thinking about the mathematics of the lesson.</p>	<p> Don't solely assign ELs to the EL teacher; we all share the responsibility to provide powerful learning experiences for ELs. Avoid ELs missing instruction in grade-level mathematics content. Avoid a heavily remediation-focused approach to instruction due to perceived "learning loss."</p>
	<p> Don't forget all the meaning-making resources and realia that you use in the regular classroom; similar tools are available online and in students' immediate environment. Tools such as Virtual Manipulatives, Desmos and GeoGebra provide ELs with additional, dynamic sense-making opportunities.</p>

It is recommended that these practices be part of a comprehensive approach to EL instruction and not in isolation as laid out in our [Guidelines for Improving Math Materials for English Learners](#).

Endnotes

- 1 Moschkovich, J. (2013). [Principles and guidelines for equitable mathematics teaching practices and materials for English language learners](#). *Journal of Urban Mathematics Education*, 6(1), 45-57.
- 2 Tinubu Ali, T. & Herrera, M. (2020). [Distance learning during COVID-19: Seven equity considerations for schools and districts](#). Atlanta, GA: Southern Education Foundation.
- 3 Zehler, A. M., Miyaoka, A., Chaney, B., Orellana, V., Vahey, P., Gibney, D. T., ... & Yilmazel-Sahin, Y. (2019). [Supporting English Learners through Technology: What Districts and Teachers Say about Digital Learning Resources for English Learners](#). Volume I. *Office of Planning, Evaluation and Policy Development, US Department of Education*.

Based on the research and ELSF guidelines, we suggest the following:



Give students feedback on content and language skills that are specific, actionable, and connected to meaning (not grammatical accuracy). Use strong questioning throughout instruction to prompt student meta-cognitive thinking and develop awareness of how they use language in their discussions and in their writing. Feedback does not have to be provided only by the teacher—students should be encouraged to comment on each other’s work or discuss problems in a virtual “room” together, or with someone at home.



Don’t cut out opportunities to interact and build math knowledge together. Design math discussions for student-led small groups using platforms such as Zoom or Google Meet or a discussion board; a low-text option may include setting up a conference call number to speak with students about how they went about finding the solution to an equation. Prompts for extensive discussion might include: *Do you agree with the strategy or explanation? How would you explain your strategy to others? Can you explain what the problem is asking?*



Don’t give students feedback that robs them from the opportunity to productively struggle with relevant, rigorous, grade-level mathematics. Don’t give them feedback that leads them down the path of your own thinking. Don’t tell. Ask another question.

It is recommended that these practices be part of a comprehensive approach to EL instruction and not in isolation as laid out in our [Guidelines for Improving Math Materials for English Learners](#).