

Welcome to the MELL Lesson Bank!

The MELL Lesson Bank is a collaboratively developed product compiled in response to educator requests for sample lessons that model effective instruction in mathematics for English Language Learners. This product is one of many instructional resources developed by the Texas State University System (TSUS) Math for English Language Learners (MELL) Initiative that is a collaborative of TSUS, its member universities, and the Texas Education Agency.

The lesson plans included in the MELL Lesson Bank are not in any way intended to be a comprehensive curriculum for a specific math course, but rather to provide examples from which teachers can learn to adapt their own lessons in ways that will support the learning of English Language Learners. As additional lessons are developed and refined, they will be added to the Lesson Bank in order to continue to provide teachers with sample lessons that demonstrate techniques designed specifically to support English Language Learners in mathematics.

Who Developed These Lessons?

For the past several years, teams of math educators from the five Texas State University System universities have conducted MELL Critical Campuses Partnership Summer Institutes across Texas for secondary math teachers. In these week-long institutes, math teachers have learned specific strategies for designing their own instruction in ways that maximize learning for students for whom English is not their native language. In follow-up sessions during the subsequent school year, teachers often excitedly share their experiences and copies of lessons that they have developed for use with their students. The math professors working with each institute have collaborated with these teachers to refine these lessons for inclusion in the MELL Lesson Bank. These submissions were then edited by a team of MELL staff members and circulated for review by other math educators. On each plan, following the Introductory Section of the Lesson, the names of the original developers and the lesson plan editors are listed.

Which Lessons Should I Focus On?

Teachers are encouraged to peruse all of the lesson plans and will likely get good ideas from each plan within the collection. However, certain plans will be more helpful than others depending upon which grade levels and math courses you teach. The grid below indicates which plans are most appropriate for teachers of specific grade levels and math courses. We encourage you to focus initially on those plans identified as being particularly helpful for the specific courses you teach.

**Model Lesson Plans
Mathematics for English Language Learners**

Lesson Title	TEKS Addressed	6th Grade	7th Grade	8th Grade	Algebra I	Geometry
Adding Integers	7.2(C)		•			
Central Tendency (2 Parts)	6.10(B)	•				
Cow Pens and Bull Pens	A.1(A,B,C,D,E); A.2(A,B,C,D); A.3(A,B), A.5(A,B,C,); A.6(A,B)				•	
Distance Formula	8.9(A); A.1(D); A.3(A,B); A.6(A)			•	•	
Geometric Patterns	G.5					•
Graphing Transformations on Coordinate Plane	8.6(B)			•		
Indirect Measure	G.11					•
Inequalities in Real Life	A.3(A); A.7(A,B,C)				•	
Nets and Surface Areas	G.6(B); G.8(A,B,C,D); G.9(D)					•
Number Sense	8.1(A)				•	
Parallel and Perpendicular Lines	G.9					•
Pythagorean Theorem	G.8					•
Solving Quadratic Equations	A.10(A,B)				•	
Triangles & Congruence	G.10					•
Using Algebraic Symbols	A.1(C,D)				•	
What's In The Dimensions?	6.8(B), 7.8(B), 8.7(A)	•	•	•		

What Are “MELL Connections” and Where Did They Come From?

The “MELL Connections” are suggestions/examples of strategies that facilitate learning for English Language Learners. The “MELL Connection” techniques have been derived from the experiences of the math teachers and professors who have worked in MELL since its inception in 2004. The “MELL Connections” are listed in the right hand column of the Learning Plan section of the lesson and are provided as a visual cue that the activity underway is designed to support the English Language Learner. Some “MELL Connections” are general in nature and apply to all lessons and all classrooms, so these connections are listed immediately before the Learning Plan section and then are referenced by number in the plan as a reminder to the reader that this connection is “in play” at this specific point in the lesson.

The list of “MELL Connections” is not exhaustive and new connections are added on an on-going basis. Below is the current list that was used in the development of the lessons included in this MELL Lesson Bank.

MELL Connections

MELL Connections that apply to all lessons.

(MC-01) - To assist ELLs, teachers should use speech appropriate for the student's proficiency level such as slower rate, enunciation, and simple sentences for beginners, give clear explanations of academic tasks, and use a variety of techniques such as modeling, visuals, and demonstrations to make new concepts clear.

(MC-02) - Teachers should foster trusting relationships with ELLs through informal conversations and presentation of a culturally rich classroom.

(MC-03) - ELLs may need extra opportunities to demonstrate mastery. Grading policies should be flexible enough to provide multiple learning opportunities without severe grade penalties.

(MC-04) - ELLs may work at a slower pace than other students because of limited English language skills and should be provided with shortened assignments, or when appropriate, extra time to work on assignments.

(MC-05) - ELLs should be scheduled in a math class that has students who have some proficiency in both languages. Teachers may need to work with counselors and others to ensure that this happens.

(MC-06) - Teachers should offer tutoring as frequently as possible and encourage ELLs to come in for extra assistance. If possible, the teacher should arrange for an aide or parent volunteer who speaks the language of the ELL to help with translation during the tutoring period on a regular schedule (for example, on Tuesdays and Thursdays, after school).

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MELL Connections that are lesson-specific

(MC-07) - New concepts should first be presented to ELLs in a concrete manner, followed by a semi-concrete manner, and finally an abstract manner.

(MC-08) - Hands-on activities involving math manipulatives are typically helpful to ELLs because the lesson involves multiple learning modalities and does not require the student to rely solely upon his/her ability to understand verbal instruction.

(MC-09) - To assist the ELLs, the teacher should model the expected task and use visual representations to reinforce concepts and/or steps in the problem-solving process. Critical concepts should be clearly emphasized and repeated.

(MC-10) - ELLs should be provided with or assisted in developing a learning aid that shows math vocabulary in both English and their native language and should be allowed to use this tool when working on assignments. Student-made glossaries, word walls, and compare and contrast charts may help ELLs learn mathematics vocabulary.

(MC-11) - Include English language objectives in mathematics lessons for ELLs when appropriate.

(MC-12) - ELLs should be given numerous opportunities to write about the mathematics concepts they are learning. Journal entries, for example, provide opportunities for the students to crystallize their thinking about concepts and for the teacher to check for understanding. Students who have limited English language skills should be allowed to write in their first language initially and should not be penalized for spelling or grammar errors.

(MC-13) - Before asking ELLs to speak on a mathematics topic or problem in class, give the student time to practice what they will say with a peer tutor or partner. Without this technique, ELLs may tend to just say “I don’t know” when asked a question to avoid possible embarrassment over language deficiencies.

(MC-14) - Teachers should support ELLs who need extra time for dialogue by providing opportunities to work in groups. When possible, pair each ELL with another student who has some fluency in the ELL’s dominant language and who can function as a “peer tutor.”

(MC-15) - In forming groups, the teacher should make sure that ELLs are assigned with a peer tutor, that ELLs are distributed among groups, and that no group is predominantly comprised of ELLs.

(MC-16) - When monitoring ELLs during instruction, the teacher should make a special effort to assist, re-explain and demonstrate again, if necessary. Encouragement and reinforcement should be used frequently.

(MC-17) - Examples that are relevant to the lives of ELLs are helpful in motivating

students and in promoting their engagement with the content.

(MC-18) - Homework assignments must reinforce ELLs understanding of the instructional objectives. Appropriate homework can enhance communication with parents, but such homework should not be dependent upon the parents' skills in mathematics.

What Should I Know About the Lesson Format?

Because the lessons were originally developed by teachers from different districts that use different lesson plan formats, you will see some differences, as well as some commonalities, across the plans. The MELL editors helped standardize the Introductory section of each plan that includes the Overview, TEKS addressed, Critical Vocabulary, Enduring Understandings (Big Ideas), Essential Questions, Learning Goals, Materials Needed, Assessment Plan, and General MELL Connections. In order to maintain the essence of the lesson as it was originally developed, the Learning Plan section of the lesson is in the format preferred by the original developer. For example, some lessons use the “5E” format, while others use a “Hunter lesson cycle” format, while others provide step-by-step instructions for the teacher. The “MELL Connections” are listed in the right-hand column of the Learning Plan section and denote how the activity underway in the lesson is specifically tailored for the English Language Learner. The final section of each Lesson Plan includes the English Language Proficiency Standards which are explained below.

What are English Language Proficiency Standards and How Are They Used?

Prior to 2008, the English Language Proficiency Standards (ELPSs) have been listed in the English Language Arts TEKS, but teachers in all subjects and grade levels are and have been accountable for providing appropriate instruction for English Language Learners. In order to make this expectation more explicit, starting in 2008, the English Language ELPSs have been incorporated into the TEKS for each subject area, including mathematics. Because of this recent change and in order to better support teachers in the instruction of English Language Learners, the MELL Lesson Bank Editors have listed the ELPSs at the end of the plan and have checked those standards that, in their opinion, are integrated into the lesson.