

Texas Algebra I: Module 2, Topic 3 Pacing Guide

150-Day Pacing



2 Exploring Constant Change

Topic 3: Systems of Equations and Inequalities

ELPS: 1.A, 1.C, 1.D, 2.C, 2.D, 2.G, 2.H, 2.I, 3.A, 3.B, 3.C, 3.D, 3.F, 4.A, 4.B, 4.C, 4.G, 4.K, 5.E

Topic Pacing: 19 Days

Lesson	Lesson Title	Highlights	TEKS*	Pacing**
1	The County Fair Using Substitution to Solve Linear Systems	Students use the substitution method to solve systems of linear equations. They use substitution to solve systems of linear equations including those with no solution or with infinite solutions. Students define variables, write systems of equations, solve systems, and interpret the meaning of the solution in terms of the problem context. In the last activity they are given four systems of linear equations and solve each system using the substitution method.	A.2I A.3F A.3G A.5C	2
Suggested Placement of Learning Individually with Skills Practice or MATHia				1
2	Double the Fun Using Graphing to Solve Systems of Equations	Students write an equation in standard form to represent a scenario and determine a solution to the scenario and equation. They graph the linear equation using intercepts, and then analyze a second graph with the independent and dependent variables reversed. A new relationship between the quantities is then provided, and students write the equation expressing the relationship. Finally, they graph the new equation on two separate coordinate planes showing the graphed lines from the original scenario creating a system of linear equations. A <i>system of linear equations</i> is defined. Students solve the system both graphically and using technology, checking the solution by substituting the values back in to the original equations. Next, they are provided three related scenarios in which they write systems of equations in general form and solve the systems graphically and algebraically using the substitution method. This activity demonstrates that a system of two linear equations may have no solution, one solution, or an infinite number of solutions. The related terms <i>consistent systems</i> and <i>inconsistent systems</i> are defined.	A.2A A.2C A.2I A.3F A.3G A.5C	2
Suggested Placement of Learning Individually with Skills Practice or MATHia				1
3	The Elimination Round Using Linear Combinations to Solve a System of Linear Equations	Students are given a problem scenario and use reasoning to determine the two unknowns. They then write a system of linear equations in standard form to represent a problem situation. Students analyze two solution paths, one using substitution and one using the <i>linear combinations method</i> in its most basic form prior to its formal definition later in the activity. They practice the linear combinations method with systems in which the coefficients of one variable are additive inverses. Next, worked examples guide students to multiply one, and then both, equations by a constant to create equations in which a variable has coefficients that are additive inverses. Students concentrate on creating coefficients that are additive inverses with several systems without entirely solving the system, and then they solve two problems in context, one with fractional coefficients. The lesson concludes with students addressing when it is appropriate to use the graphing, substitution, or linear combinations methods.	A.2I A.5C	3
Suggested Placement of Learning Individually with Skills Practice or MATHia				1
Mid-Topic Assessment				1

Texas Algebra I: Module 2, Topic 3 Pacing Guide

150-Day Pacing



Lesson	Lesson Title	Highlights	TEKS*	Pacing**
4	Throwing Shade Graphing Inequalities in Two Variables	Students explore a linear inequality in two variables through a scenario. They write an inequality, complete a table of values, graph the coordinate pairs from the table, and determine which parts of the graph are solutions to the inequality. Students then formalize the process of graphing inequalities through practice without context; they graph the corresponding equation of an inequality as a boundary line, determine whether the line should be solid or dashed, and identify which half plane to shade by testing the point (0, 0) in the original inequality. Students also match inequalities to graphs and write inequalities presented as graphs. They then solve a problem in context where they use a table of values to write and graph a linear inequality and refer to the inequality and/or its graph to respond to questions. Finally, students summarize the difference between the graphs of linear equations and linear inequalities and compare the solution sets of linear equations and linear inequalities.	A.2H A.3D	2
Suggested Placement of Learning Individually with Skills Practice or MATHia				1
5	Working with Constraints Systems of Linear Inequalities	Students represent a scenario with a system of linear inequalities and graph the system. Overlapping shaded regions identify the possible solutions to the system. Students then practice graphing several systems of inequalities and representing the solution set. A different scenario is given that students model with a system of linear inequalities. They then graph the system, determine two different solutions, and algebraically prove that the solutions satisfy both constraints defined by the system. Finally, students match systems, graphs, and possible solutions of systems that have identical terms with different inequality symbols.	A.2H A.3D A.3H	3
6	Working the System Solving Systems of Equations and Inequalities	Students solve problems in context requiring a system of linear equations. While most problems can be modeled by a system of two equations, they are guided through the process of solving a system of four equations, and another context can be modeled by a system of three equations. Students have the opportunity to solve the systems using any method and sometimes must respond in the format of an email or proposal. Solutions involve making a decision based upon inputs that lie before or after the point of intersection, thus requiring solutions written as inequalities.	A.2H A.2I A.3D A.3H A.5C	0
End of Topic Assessment				1

Texas Algebra I: Module 2, Topic 3 Pacing Guide

150-Day Pacing



1 Day Pacing = 45-minute Session

* This activity highlights a key term or concept that is essential to the learning goals of the lesson.



Day 1	Day 2	Day 3	Day 4	Day 5
<p>TEKS: A.2I, A.3F, A.3G, A.5C</p> <p>LESSON 1 The County Fair GETTING STARTED ACTIVITY 1 *</p>	<p>LESSON 1 continued ACTIVITY 2 * ACTIVITY 3 * TALK THE TALK *</p>	<p>LEARNING INDIVIDUALLY Skills Practice OR MATHia</p>	<p>TEKS: A.2A, A.2C, A.2I, A.3F, A.3G, A.5C</p> <p>LESSON 2 Double the Fun GETTING STARTED * ACTIVITY 1 * ACTIVITY 2 *</p>	<p>LESSON 2 continued ACTIVITY 3 * TALK THE TALK *</p>
Day 6	Day 7	Day 8	Day 9	Day 10
<p>LEARNING INDIVIDUALLY Skills Practice OR MATHia</p>	<p>TEKS: A.2I, A.5C</p> <p>LESSON 3 The Elimination Round GETTING STARTED * ACTIVITY 1 *</p>	<p>LESSON 3 continued ACTIVITY 2 * ACTIVITY 3 *</p>	<p>LESSON 3 continued ACTIVITY 4 * TALK THE TALK *</p>	<p>LEARNING INDIVIDUALLY Skills Practice OR MATHia</p>
Day 11	Day 12	Day 13	Day 14	Day 15
<p>MID-TOPIC ASSESSMENT</p>	<p>TEKS: A.2H, A.3D</p> <p>LESSON 4 Throwing Shade GETTING STARTED ACTIVITY 1 * ACTIVITY 2 *</p>	<p>LESSON 4 continued ACTIVITY 3 * TALK THE TALK *</p>	<p>LEARNING INDIVIDUALLY Skills Practice OR MATHia</p>	<p>TEKS: A.2H, A.3D, A.3H</p> <p>LESSON 5 Working with Constraints GETTING STARTED * ACTIVITY 1 *</p>

Texas Algebra I: Module 2, Topic 3 Pacing Guide

150-Day Pacing

1 Day Pacing = 45-minute Session

* This activity highlights a key term or concept that is essential to the learning goals of the lesson.

Day 16	Day 17	Day 18	Day 19
LESSON 5 <small>continued</small> ACTIVITY 2 * ACTIVITY 3	LESSON 5 <small>continued</small> ACTIVITY 4 TALK THE TALK *	LEARNING INDIVIDUALLY  Skills Practice OR  MATHia	END OF TOPIC ASSESSMENT