1 Exploring Patterns in Linear and Quadratic Relationships

Topic 1: Extending Linear Relationships

ELPS: 1.A, 1.C, 1.D, 1.E, 1.F, 1.G, 2.C, 2.D, 2.E, 2.G, 2.H, 2.I, 3.A, 3.B, 3.C, 3.D, 3.E, 3.F, 4.A, 4.B, 4.C, 4.G, 4.K, 5.B, 5.E, 5.F, 5.G   **Topic Pacing:** 17 Days

Lesson	Lesson Title	Highlights	TEKS*	Pacing**
1	**Gauss in Das Haus** Solving Systems of Equations	Students solve systems comprised of linear and quadratic equations. They begin by solving a system of two linear equations graphically and algebraically. Students then use substitution to solve a system that is comprised of a quadratic equation and a linear equation. In each case, they use graphs to determine the number of possible solutions to that type of system. Students practice solving systems of two equations in real-world and mathematical problems. Students then solve systems of three linear equations in three variables using substitution and Gaussian elimination, both in and out of context.	**2A.3A** **2A.3B** 2A.3C 2A.3D	2
		Suggested Placement of Learning Individually with Skills Practice or MATHia		1
2	**Make the Best of It** Optimization	Students move from solving systems of equations to solving systems of inequalities. They model problems in context requiring several inequalities to be graphed on the same coordinate plane. Students recognize that the solution to a system of inequalities is the intersection of the solutions to each inequality. Then, through a context, they are introduced to linear programming as a process to determine the optimal solution to a system of linear inequalities. Students use linear programming to solve problems and explain the difference between the solution to a system of linear inequalities and the solution to an equation calculated by linear programming.	**2A.3A** 2A.3E 2A.3F 2A.3G	2
		Suggested Placement of Learning Individually with Skills Practice or MATHia		1
3	**Systems Redux** Solving Matrix Equations	Students are introduced to identity and inverse matrices. They express a system of equations as a matrix equation. Students relate solving a matrix equation to solving a linear equation, and the use of technology to solve a matrix equation. As a culminating activity, they model a scenario with a system of equations, convert it to a matrix equation, solve the matrix equation using technology, and interpret the solution in terms of the scenario.	**2A.3B**	2
		Suggested Placement of Learning Individually with Skills Practice or MATHia		1
4	**Putting the V in Absolute Value** Defining Absolute Value Functions and Transformations	Students are already familiar with the general shape of the graphs of absolute value functions, and they have studied transformations of linear functions. In this lesson, students experiment with the absolute value function family. They expand their understanding of transformations to include horizontal translations and dilations. Students interpret functions in the form $f(x) = A(B(x − C)) + D$. They distinguish between the effects of changing values inside the argument of the function (the B- and C-values) and changing values outside the function (the A- and D-values). At the end of the lesson, students summarize the impact of transformations on the domain and range of the absolute value function.	**2A.2A** 2A.6C 2A.7I	3
		Suggested Placement of Learning Individually with Skills Practice or MATHia		1

Lesson	Lesson Title	Highlights	TEKS*	Pacing**
5	**Play Ball!** Absolute Value Equations and Inequalities	Students begin this lesson by graphing the solution sets of simple absolute value equations on number lines and writing simple absolute value equations given their number line graphs. They then investigate absolute value functions using a real-world context. First, students write an absolute value equation to represent the context and solve it graphically. They then learn through a worked example and student work how to solve absolute value equations and practice this skill. Students revisit the real-world context; however, this time they write an absolute value inequality and solve it graphically. Students are provided compound inequalities that are equivalent to absolute value inequalities and they use these relationships to solve and graph absolute value inequalities.	2A.6D **2A.6E** 2A.6F	2
	Suggested Placement of Learning Individually with Skills Practice or MATHia			1
	End of Topic Assessment			1

CL **TEXAS MATH SOLUTION**

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
TEKS: **2A.3A**, **2A.3B**, 2A.3C, 2A.3D
LESSON 1
Gauss in Das Haus
GETTING STARTED
ACTIVITY 1 ✱
ACTIVITY 2 ✱

Day 2
LESSON 1 continued
ACTIVITY 3 ✱
ACTIVITY 4 ✱
TALK THE TALK ✱

Day 3
LEARNING INDIVIDUALLY
🔄 Skills Practice
OR
🤖 **MATHia**

Day 4
TEKS: **2A.3A**, 2A.3E, 2A.3F, 2A.3G
LESSON 2
Make the Best of It
GETTING STARTED ✱
ACTIVITY 1 ✱

Day 5
LESSON 2 continued
ACTIVITY 2 ✱
TALK THE TALK ✱

Day 6
LEARNING INDIVIDUALLY
🔄 Skills Practice
OR
🤖 **MATHia**

Day 7
TEKS: **2A.3B**
LESSON 3
Systems Redux
GETTING STARTED
ACTIVITY 1

Day 8
LESSON 3 continued
ACTIVITY 2 ✱
TALK THE TALK ✱

Day 9
LEARNING INDIVIDUALLY
🔄 Skills Practice
OR
🤖 **MATHia**

Day 10
TEKS: **2A.2A**, 2A.6C, 2A.7I
LESSON 4
Putting the V in Absolute Value
GETTING STARTED ✱
ACTIVITY 1 ✱

Day 11
LESSON 4 continued
ACTIVITY 2 ✱
ACTIVITY 3 ✱

Day 12
LESSON 4 continued
ACTIVITY 4 ✱
ACTIVITY 5
TALK THE TALK ✱

Day 13
LEARNING INDIVIDUALLY
🔄 Skills Practice
OR
🤖 **MATHia**

Day 14
TEKS: 2A.6D, **2A.6E**, 2A.6F
LESSON 5
Play Ball!
GETTING STARTED ✱
ACTIVITY 1 ✱
ACTIVITY 2 ✱
ACTIVITY 3 ✱

Day 15
LESSON 5 continued
ACTIVITY 4
ACTIVITY 5 ✱
TALK THE TALK ✱

TEXAS MATH
SOLUTION

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
LEARNING INDIVIDUALLY	**END OF TOPIC ASSESSMENT**
Skills Practice	
OR	
MATHia	