Name_____Date_____

Using Linear and Absolute Value Functions
Lesson Plan

Lesson Overview: In this lesson, students apply linear functions to generate a regression model and make predictions from data. Students also extend linear functions to formulate absolute value functions and then solve related equations and inequalities. Students also analyze the effects of transformations on the absolute value parent function. TEKS: 2A.6C, 2A.6D, **2A.6E**, 2A.6F, 2A.8A, 2A.8B, and **2A.8C.**

	Procedures	Facilitation Questions	Advance Preparation
Engage	• Provide each student group with the **Engage Activity Sheet** and a graphing calculator. • Play the video for the class. Pause as needed. • Have students complete the activity. • Have students share their results. • If desired, display the **Engage Answer Key**.	• If you were to connect most of the points with one line or curve, what parent function would the curve most resemble? • Does the data set appear to be increasing or decreasing?	• Access to **Math Journals** • Graphing calculator
Explore	• Provide students with a copy of the **Explore Activity Sheet** and a graphing calculator. • Play the video for the class. • Have students complete the activity sheet as you ask facilitation questions. • If desired, display the **Explore Answer Key**. • Use the video to discuss the debriefing questions.	• Where do the two graphs intersect? What does this point represent in your table? • What is the rate of change? • Why does the rate of change switch signs? • How does this relate to the context of the problem?	• Copies of the **Explore Activity Sheet** for each student • Graphing calculators
Explain	• Play the video for the class. Pause and repeat as necessary for students to construct their foldable graphic organizers. • Provide students **Math Journals**. • Play the video to show the Journal Entry. • Answer the **Trajectory Check** questions.	• How do you solve an absolute value equation using a graph, table, or symbolic representation? • Why do you take both the positive and negative quantities when solving absolute value equations? • How do you represent the solution set of an inequality on a number line?	• Access to **Math Journals** • Half-sheet of paper for each student • Colored pencils or markers, scissors, and glue, tape, or paste for each student
Elaborate	• Provide a copy of the **Elaborate Activity Sheet** for each student. • Play the video for the class. • Have students complete the activity sheet as you ask facilitation questions. • If desired, display the **Elaborate Answer Key**. • Use the video to discuss the debriefing questions. • Answer the **Trajectory Check** questions.	• Which parameters generate vertical changes? Horizontal changes? • What is the difference between the parameters a and b? • What is the difference between the parameters c and d? • What happens to the vertex of the absolute value function?	• Copies of the **Elaborate Activity Sheet** for each student • Access to **Math Journals**
Evaluate	• Display the questions or provide a printed copy of the **Evaluation Questions** for each student. • Have students solve the problems in their **Math Journal**.		• Access to **Math Journals** • If desired make a copy of the **Evaluation Questions** for each student.