

**HPISD CURRICULUM**  
(MATH, GRADE 8)

**EST. NUMBER OF DAYS: 8**

UNIT NAME	<b>UNIT 4: GRAPHING AND PATTERNS</b>	
<b>Unit Overview</b>	Graphing on a coordinate plane, equations from lines, tables, ordered pairs, and functions vs. non-functions	
<b>Generalizations/Enduring Understandings</b>	<ul style="list-style-type: none"> <li>Linear relationships are characterized by a constant rate of change and may be proportional or non-proportional.</li> <li>One representation of a data set can be used to generate a different representation of the same data.</li> <li>Relationships among elements in a problem situation can be expressed in an equation and that equation used to solve the problem.</li> <li>Ordered pairs on the coordinate plane are used to physically represent quantitative relationships.</li> </ul>	
<b>Concepts</b>	<p>Orientation and Location - Objects in space can be oriented in infinite ways, and an object's location in space can be described quantitatively.</p> <p>Equations and Inequalities - Rules of arithmetic and algebra can be used together with notions of equivalence to transform equations and inequalities so solutions can be found.</p>	
<b>Guiding/Essential Questions</b>	<ul style="list-style-type: none"> <li>What are the characteristics of linear relationships?</li> <li>What are the advantages and disadvantages of different forms of data representation?</li> <li>What types of situations can be represented by algebraic equations?</li> <li>What are the advantages of representing quantitative relationships graphically?</li> </ul>	
	<i>Performance Levels</i>	<i>Learning Progression (** Decision Point)</i>
<b>Learning Targets</b>	LEVEL 4: <b><u>LEVEL 3:</u></b> LEVEL 2:	Represent, apply, and analyze proportionality.
	LEVEL 4: <b><u>LEVEL 3:</u></b> LEVEL 2:	Use algebraic notation and the rational number system to represent and solve problems in a variety of contexts.
<b>Formative Assessments</b>	<i>Title</i>	
<b>Summative Assessments</b>	<i>Title</i>	
	<i>TEKS</i>	<i>Specifications</i>
<b>TEKS (Grade Level) / Specifications</b>	<p><b>8.5(G)</b> Identify functions using sets of ordered pairs, tables, mappings, and graphs</p> <p><b>8.1(A)</b> apply mathematics to problems arising in everyday life, society, and the workplace</p> <p><b>8.1(B)</b> use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process</p>	

	<p>and the reasonableness of the solution</p> <p><b>8.1(C)</b> select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems</p> <p><b>8.1(D)</b> communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate</p> <p><b>8.1(E)</b> create and use representations to organize, record, and communicate mathematical ideas</p> <p><b>8.1(F)</b> analyze mathematical relationships to connect and communicate mathematical ideas</p> <p><b>8.1(G)</b> display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication</p>	
<p><b>Processes and Skills</b></p>	<p><b><u>What students should be able to DO</u></b></p> <ul style="list-style-type: none"> <li>• Find a missing coordinate in an ordered pair using an equation</li> <li>• Write a solution as an ordered pair</li> <li>• Determine the relationship between x and y in a table of values</li> <li>• Graph a linear equation from a table and from an equation</li> <li>• Write an equation from a table of values, a list of ordered pairs, or a graph</li> <li>• Determine whether or not a function is represented using mappings, ordered pairs, and a table.</li> <li>• Find slope of a line by dividing the change in y-coordinates by the change in x-coordinates.</li> <li>• Identify that the y-intercept of a line is where the line crosses through the y-axis.</li> </ul>	<p><b><u>What students should KNOW</u></b></p> <ul style="list-style-type: none"> <li>• An ordered pair names a unique point on the coordinate plane and contains two elements: the first is the value of the x coordinate and the second is the value of the y coordinate.</li> <li>• An inequality is a statement about the relative size of two objects (values or variables).</li> <li>• The location of quadrants I, II, III, and IV in the coordinate plane.</li> <li>• The direction (positive or negative) of values for x and y in each of the 4 quadrants in the coordinate plane.</li> </ul>
<p><b>Topics</b></p>	<p>Graphing and understanding inequalities</p> <p>Graphing from tables</p> <p>Slope and y-intercept of a line</p> <p>Solutions from ordered pairs</p> <p>Writing equations</p>	
<p><b>Language of Instruction</b></p>	<p>coordinates</p> <p>equation</p> <p>function</p> <p>inequality</p> <p>greater than (or equal to)</p> <p>less than (or equal to)</p> <p>mapping</p> <p>ordered pair</p>	

	slope y-intercept
<b>State Assessment Connections</b>	
<b>National Assessment Connections</b>	
<b>Resources</b>	