

<b>Strand I: Foundations of Functions</b>						
<b>Section &amp; Objective</b>	<b>TEKS/TAKS</b>	<b>TEXES</b>	<b>ETQ: Algebra I Activity</b>	<b>Algebra I: 2000 &amp; Beyond TEXTEAMS Institute<sup>1</sup></b>	<b>Algebra I Assessments<sup>2</sup></b>	<b>Technology<sup>3</sup></b>
To introduce foundations for functions through patterns — including range, domain, independent, dependent, and an informal introduction to rate of change in graphs, tables, and patterns	<p><b>Obj. 1</b> A.1 A, B, C, D, E</p> <p><b>Obj. 2</b> A.1 A, B, D, E</p> <p>A.3 B</p>	<p>II.004a II.005b II.005c II.005e II.006a</p>	<p>· <b>Topic 1.0 — Classroom Connections</b> · <b>Overarching problem preview</b> · <b>Topic 1.1 — Identifying Patterns</b></p> <p>◇ Task 1 Increasing Patterns 1a With direct variation, range, domain, informal intro. to rate of change 1b Without direct variation</p> <p>◇ Task 2 Decreasing Patterns — linear</p> <p>◇ Task 3 Area Patterns — nonlinear</p> <p>◇ Task 4 Patterns w/ negatives</p> <p>◇ Task 5 From Graphs to Patterns</p> <p>◇ Task 6 From Functions to Graphs</p> <p>◇ Task 7 Pattern Application</p> <p>◇ <b>Teacher's Journal</b></p>	<p>2.1 Identify Patterns 1.1 Variables &amp; Functions</p>	<p>◇ Mosaics</p> <p>◇ Swimming Pools</p> <p>◇ The 600-Meter Race</p> <p>◇ Bathing the Dog</p> <p>◇ Distance &amp; Time</p>	<p><b>Project Interactives</b></p> <p>"Factorize" Scroll down to Lessons; Scroll down to functions and algebra connections;</p> <p><b>Titles:</b></p> <p>◇ Intro to Functions</p> <p>◇ Intro to Linear</p> <p>◇ Graph &amp; Coordinates</p> <p>◇ Area Explores</p> <p>◇ Maze Games</p>

<sup>1</sup> This column shows elements of the Dana Center’s Algebra I: 2000 and Beyond TEXTEAMS Institute that are relevant to the named activities. For more information about TEXTEAMS, see [www.textteams.org](http://www.textteams.org).

<sup>2</sup> This column lists tasks in the Dana Center’s *Algebra I Assessments* book. The book can be downloaded from [www.tenet.edu/teks/math/clarifying/algebra1/](http://www.tenet.edu/teks/math/clarifying/algebra1/).

<sup>3</sup> This column includes key words from web-based programs; we suggest that trainers and teachers search on the web for the most up-to-date source.

	<p><b>Obj. 3</b> A.5 C</p> <p><b>Obj. 4</b> A.7 A, B</p> <p><b>Obj. 8</b> 8.10 A</p>		<p>· <b>Topic 1.2 — Independent &amp; Dependent</b></p> <ul style="list-style-type: none"> <li>◇ Task 1 Definition of Function</li> <li>◇ Task 2 Independent and Dependent Statements</li> <li>◇ Task 3 Mathematical Definition of Functions</li> <li>◇ Task 4 Exploring Dependent and Independent</li> <li>◇ Task 5 The ABCs of Walking!</li> <li>◇ Task 6 Cage the Cats</li> <li>◇ <b>Teacher's Journal</b></li> </ul> <p>· <b>Topic 1.3 Changing Perimeter (Capstone)</b></p> <ul style="list-style-type: none"> <li>◇ Task 1 Changing Perimeter — Teacher Activity</li> <li>◇ Task 2 Changing Perimeters x — Student Activity</li> <li>◇ Task 3 Changing Perimeters y — Student Activity</li> <li>◇ Task 4 Changing Perimeters x and y — Student Activity</li> <li>◇ Task 5 Changing Area — Student Activity</li> </ul> <p>· <b>Topic 1.4 Classroom Connections Revisited</b></p>	<p>1.2 Valentine's Day Idea</p> <p>3.1 Interpreting Distance vs. Time Graphs</p>	<p>◇ Extracurricular Activities</p> <p>◇ Making Stuffed Animals</p> <p>◇ Nested Rectangles</p>	<ul style="list-style-type: none"> <li>◇ Coordinates Graph-It</li> <li>◇ Whole # Crunch</li> <li>◇ Number Crunch</li> <li>◇ Pascal's Triangle</li> <li>◇ Scatter Plots</li> <li>◇ Sequencer</li> <li>◇ Plop It!</li> <li>◇ Geoboard</li> <li>◇ Area Explorer</li> <li>◇ Perimeter Explorer</li> <li>◇ Slope Explorer</li> </ul>
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<b>Strand II: Linear Functions</b>						
<b>Section &amp; Objective</b>	<b>TEKS/TAKS</b>	<b>TEXES</b>	<b>ETQ: Algebra I Activity</b>	<b>Algebra I: 2000 &amp; Beyond TEXTTEAMS Institute</b>	<b>Algebra I Assessments</b>	<b>Technology</b>
Formal introduction to slope and y-intercepts through application and geometry. Connections among representations: symbolic, graphical, and tabular.	<p><b>Obj. 1</b> A.1 A, B, C, D, E</p> <p><b>Obj. 2</b> A.2 A, B, C, D A.3 A, B</p> <p><b>Obj. 3</b> A.5 A, B, C A.6 A, B, D, E, F, G</p> <p><b>Obj. 4</b> A.7 A, B, C  A.8 A, B, C</p>	<p>II.004a II.005 a,b,c,e II.006 a,b,f,g III.001b IV.016 a,b,c,d,</p>	<p>• <b>Topic 2.0 Classroom Connections</b></p> <p>• <b>Preview of Overarching Problem</b></p> <p>• <b>Topic 2.1 Parent Function</b>                      ◇ Task 1 What's the Perimeter?                      ◇ Task 2 Shooting Percentages                      ◇ Task 3 Over or Under?                      ◇ <b>Teacher's Journal</b></p> <p>• <b>Topic 2.2 Formalizing Slope and Y-intercept</b>                      ◇ Task 1 Cups, Cups, Cups                      ◇ Task 2 Describe Stacking Cups                      ◇ Task 3 What's the New Rental Cost?                      ◇ Task 4 Slope and Y-intercept Summary                      ◇ <b>Teacher's Journal</b></p>	<p>Linear Functions                      ◇ 1.1 The Parent Function                      ◇ 1.4 Finite differences: The Birthday Gift</p>	<p>◇ CDs for the Band                      ◇ Explorer's Glide                      ◇ Geothermal Energy                      ◇ Hot-Air Balloon</p>	<p>◇ Intro to Linear                      ◇ Function Flyer Slope Slider</p>
	<p><b>Obj. 6</b> A.4 A, B, 8.6 B</p> <p><b>Obj. 7</b> 8.7 A, B 8.11 A, B</p>		<p>• <b>Topic 2.3 <math>y=mx</math> (Stacking Hexagons)</b>                      ◇ Task 1 Formal Development of Slope                      ◇ Task 2 The Height Function — Applying Slope                      ◇ Task 3 Boxes of Hexagons (Solving Equations)                      ◇ Task 4 The Count Function                      ◇ Task 5 Height Function vs. Count Function                      ◇ Task 6 Paths Between Graphs I                      ◇ <b>Teacher's Journal</b></p>		<p>◇ Making Pizzas, Making Money</p>	<p>◇ Reading Graphs</p>

			<p>● <b>Topic 2.4 <math>y=mx+b</math> (Stack of Cups)</b></p> <ul style="list-style-type: none"> <li>◇ Task 1 The Height Function</li> <li>◇ Task 2 The Size Parameters</li> <li>◇ Task 3 Solving Equations</li> <li>◇ Task 4 The Count Function</li> <li>◇ Task 5 Height Function vs. Count Function</li> <li>◇ Task 6 “Stack Space” and “Cup Space”</li> <li>◇ Task 7 Direct Proportionality</li> <li>◇ Task 8 Paths Between Graphs II</li> <li>◇ <b>Teacher's Journal</b></li> </ul>		<ul style="list-style-type: none"> <li>◇ Grocery Carts</li> </ul>	<ul style="list-style-type: none"> <li>◇ Geoboard Coordinate</li> <li>◇ (3)Virtual Manipulatives Algebra Tiles</li> <li>◇ Complete topic probability</li> <li>◇ (6) Virtual Manipulatives Space Blocks</li> <li>◇ (6) NCTM Cubes Applet</li> <li>◇ Data Flyer</li> </ul>
			<p>● <b>Topic 2.5 Applications of Slope &amp; Intercept</b></p> <ul style="list-style-type: none"> <li>◇ Task 1 Jet Ski Rental</li> <li>◇ <b>Teacher's Journal</b></li> </ul> <p>● <b>Topic 2.6 Fill it Up</b></p> <ul style="list-style-type: none"> <li>◇ Task 1 Fill it up Part 1</li> <li>◇ Task 2 Fill it up Part 2</li> <li>◇ <b>Teacher's Journal</b></li> </ul> <p>● <b>Topic 2.7 Connections &amp; Changes</b></p> <ul style="list-style-type: none"> <li>◇ Task 1 Slopes &amp; Intercepts</li> <li>◇ Task 2 And the Story Changes</li> <li>◇ Task 3 Change, Change, Change</li> <li>◇ Task 4 The ABCs of Graphing</li> <li>◇ <b>Teacher's Journal</b></li> </ul>			

			<ul style="list-style-type: none"> <li>• <b>Topic 2.8 Reflections</b></li> <li>◇ Task 1 Reflections</li> <li>◇ Task 2 Reflections about the y-axis</li> <li>◇ Task 3 Reflections about the x-axis</li> <li>◇ Task 4 Reflections about the line <math>y=x</math></li> <li>◇ Task 5 Reflections Summary</li> <li>◇ Task 6 Animating your Reflections</li> <li>◇ <b>Teacher's Journal</b></li> <li>• <b>Topic 2.9 Solving Equations Using Concrete Models</b></li> <li>◇ Task 1 Algebra tiles</li> <li>◇ Task 2 Algebra tiles with negative units</li> <li>◇ Task 3 Graphing intersections</li> <li>◇ Task 4 Algebra tiles and rational equations</li> <li>◇ Task 5 Alicia's homework</li> <li>◇ Task 6 Tile patterns</li> <li>◇ <b>Teacher's Journal</b></li> </ul>			
			<ul style="list-style-type: none"> <li>• <b>Topic 2.10 Probability</b></li> <li>◇ Task 1 What's the Chance? — Equations</li> <li>◇ Task 2 More Chances, More Numbers — Is there a Pattern?</li> <li>◇ Task 3 What's the Chance? — Slope</li> <li>◇ Task 4 What's the Chance? — Area</li> <li>◇ <b>Teacher's Journal</b></li> <li>• <b>Topic 2.11 Building with Blocks — Child's Play</b></li> <li>◇ Task 1 Building w/ Blocks</li> <li>◇ <b>Teacher's Journal</b></li> <li>• <b>Topic 2.12 Systems of Equations (Donkey Basketball)</b></li> </ul>			

			<ul style="list-style-type: none"> <li>◇ Task 1 Donkey Basketball Fundraiser</li> <li>◇ Task 2 Susie's Homework</li> <li>◇ <b>Teacher's Journal</b></li> </ul>			
			<ul style="list-style-type: none"> <li>● <b>Topic 2.13 Scavenger Hunt (Capstone)</b></li> <li>◇ Task 1 Looking for Treasure</li> <li>◇ Task 2 Find it yet?</li> <li>◇ Task 3 Look again!</li> <li>◇ Task 4 One More Look</li> <li>◇ Task 5 Scavenger Hunt — Student version</li> <li>◇ <b>Teacher's Journal</b></li> <li>● <b>Topic 2.14 Classroom Connections Revisited</b></li> </ul>			

<b>Strand III: Quadratic and Nonlinear Functions</b>						
<b>Section &amp; Objective</b>	<b>TEKS/TAKS</b>	<b>TEXES</b>	<b>ETQ: Algebra I Activity</b>	<b>Algebra I: 2000 &amp; Beyond TEXTEAMS Institute</b>	<b><i>Algebra I</i> Assessments</b>	<b>Technology</b>
To make connections for both parameter changes and solutions among the different representations: symbolic, graphical, and tabular.			<ul style="list-style-type: none"> <li>● <b>Topic 3.0 Classroom Connections</b></li> <li>● <b>Preview Overarching Problem</b></li> <li>● <b>Topic 3.1 Pythagorean Theorem</b> <ul style="list-style-type: none"> <li>◇ Task 1 45-45 Right Triangles</li> <li>◇ Task 2 30-60 Right Triangles</li> <li>◇ Task 3 Diagonal Patterns</li> </ul> </li> <li>◇ <b>Teacher's Journal</b></li> <li>● <b>Topic 3.2 Quadratics and Solutions</b> <ul style="list-style-type: none"> <li>◇ Task 1 Application — Nets and changing height</li> <li>◇ Task 2 Parameter Changes from Tables — Quadratic Solutions</li> <li>◇ Task 3 Parameter Changes from Tables — Look at the Moves</li> <li>◇ Task 4 Patterns of Projectiles — What goes up ...</li> <li>◇ Task 5 Parameter Changes from Graphs — Autobiography of a Cat</li> </ul> </li> <li>◇ <b>Teacher's Journal</b></li> </ul>			

			<ul style="list-style-type: none"> <li>• <b>Topic 3.3 Exponential Relationships</b></li> <li>◇ Task 1 Calculator Model for Exponential Functions</li> <li>◇ Task 2 One Grain of Rice</li> <li>◇ Task 3 Stars, Stars, Stars</li> <li>◇ Task 4 Exponential Decay — No Beans About It</li> <li>◇ <b>Teacher's Journal</b></li> <li>• <b>Topic 3.4 Inverse Variations</b></li> <li>◇ Task 1 Distance and time</li> <li>◇ Task 2 Heat and Pressure</li> <li>◇ <b>Teacher's Journal</b></li> </ul>			
			<ul style="list-style-type: none"> <li>• <b>Topic 3.5 Curves Ahead (Capstone)</b></li> <li>◇ Task 1 Curves ahead</li> <li>◇ Task 2 Discussion and discovery</li> <li>◇ Task 3 Curves ahead — Student Version</li> <li>◇ <b>Teacher's Journal</b></li> </ul>			