



SWEETWATER HIGH SCHOOL PROFESSIONAL LEARNING COMMUNITY

# SEMESTER 1 PACING GUIDE

## EXT.ALG. 1A PACING GUIDE

Adopted Textbooks: Algebra, Concepts and Applications, and ancillary materials, by Glencoe

Additional Resources: Supplements provided on First Class

Content Objective	Suggested Pacing	Essential Vocabulary	Suggested Aligned Resources	Comments: <b>common assessment 1: Aug. 3 – 6 (section 3.4 – 3.7) analyze: Aug. 20</b>
1.1.Solve and apply multi-step linear equations, including equations with variables on both sides.	8 hours total 3.4 2 hours 3.5 3 hours 3.6 3 hours	<ul style="list-style-type: none"> <li>• Equation</li> <li>• Equivalent equations</li> <li>• Solution</li> <li>• Solve</li> <li>• Replacement set</li> <li>• Additive Inverse</li> <li>• Addition and subtraction properties of equality</li> </ul>	3.4 3.5 3.6	<p>3.4: Great opportunity for mathematical modeling with algebra tiles. See p. 5 in the <i>Hands On Algebra</i> Resource Book for a master of tiles (if no pre-made ones are available). Have students make a set and keep them in an envelope in their binder. Make an overhead set of tiles by Xeroxing this onto a transparency and cutting the pieces out. Also, see p. 45 in the <i>Hands on Algebra</i> book for a worksheet modeling this. Make sure to assign problems 36-38.</p> <p>3.5: Continue to use the tiles here until you get to equations with decimals and fractions. Problems #3 and 4 on p. 125 are good discussion questions. Be sure to assign problems 38-44. A good closing activity would be <i>ML Lesson 3.1 Activity Lesson Opener</i>, on p. 13 of the Algebra 1 Chapter 3 Resource Book.</p> <p><i>Algebra Support Module 1: Solving one-step equations with Algebra Tiles</i></p> <p>All sections deal with different approaches to solving one step addition equations.</p>

<p>1.4 Solve and apply absolute value equations and inequalities, including graphing solutions on a number line.</p>	<p>3 hours Total</p>	<ul style="list-style-type: none"> <li>• Absolute Value</li> <li>• Empty set</li> </ul>	<p>3.7</p>	<p>Be sure to present absolute value as <i>distance from zero</i>. Constantly connect the equation to a number line, as shown in example 1 Method 1. See Enrichment Master 3.7 for a good introduction to this idea. In Example 2, as soon as the absolute value portion has been isolated, connect the equation to the number line. Absolute value applications are found in like problems 11, 33, 34. Teacher may wish to supplement this more.</p> <p><i>Algebra Support Module 4: How Can I be Sure? (use equation portion of activity only)</i></p>
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Content Objective	Suggested Pacing	Essential Vocabulary	Suggested Aligned Resources	Comments: <b>common assessment 2 (MIDTERM): Sept. 11 – 12 (section 4.4 – 5.2)</b> <b>Analyze: Oct. 15</b>
1.1. Solve and apply multi-step linear equations, including equations with variables on both sides.  <b>Next Page</b>	15 hours total 4.4 3 hrs 4.5 4 hrs 4.6 4 hrs 4.7 4 hrs	<ul style="list-style-type: none"> <li>• Division and multiplication properties of equality</li> <li>• Multiplicative Inverse</li> <li>• Reciprocal</li> <li>• Like Terms</li> <li>• Consecutive integers</li> <li>• Identity</li> <li>• Distributive property</li> </ul>	4.4 4.5 4.6 4.7	<p>4.4: Algebra Tiles can be used here again. Start with very simple equations, like <math>3x = 12</math>. Model by dividing the 12 unit squares into 3 groups of 4 each, leading to the result that <math>x = 4</math>. Possibly open with the <i>ML Lesson 3.2 Activity Lesson Opener</i>, on p. 25 of the Algebra 1 Chapter 3 Resource Book. You may wish to split this into several days – first with integer coefficients, then with fractions and decimals. Consider showing students how to multiply the equation through by a constant in order to eliminate the fractions or decimals. This can be a nice strategy. Every time you talk about division, show and discuss how this is multiplication by the reciprocal (and vice versa). Students need to see these as the same thing. Also, when given an expression like <math>(x/5)</math>, emphasize repeatedly that this is the same as <math>(1/5)x</math>. Similarly, <math>(3x/2)</math> is the same as <math>(3/2)x</math>. Consider closing with Enrichment Master 4.4.</p> <p>4.5: Do not do the graphing calculator problems – these students need to be proficient without the calculators! Question #3 is a good problem for error analysis. Again, for problems with decimals and fractions, consider the strategy of multiplying the equation through by an appropriate constant. Be sure to cover example 5 which relates to problem 38 (number theory). <i>Algebra Support Module 1: Equation Quick Quizzes 1 and 2</i></p>
(1.1 continued)				<p>4.6: See <i>Hands on Algebra</i> p. 59 for algebra tiles instruction. Teacher may want to use supplement EA1-1 to provide more practice with word problems. Also consider using <i>ML Lesson 3.4 Activity Lesson Opener</i>, on p. 55 of the Algebra 1 Chapter 3 Resource Book. <i>Algebra Support Module 1: Error Analysis – Solving Equations</i></p> <p>4.7: NOW they have covered all aspects of solving one-variable linear equations. Stop here and summarize, and assess them on their mastery. Mastery of this objective is the most important goal for semester 1! Consider assigning a task like the one found in <i>ML Lesson 3.4 Cooperative Learning Activity</i>, on p. 61 of the Algebra 1 Chapter 3 Resource Book. Modify it to fit a problem from the Glencoe text. <i>Algebra Support Module 1: Equation Matching Activity</i></p>
1.3 Solve literal equations for a given variable.	2 hours Total	<ul style="list-style-type: none"> <li>• Literal equations</li> <li>• Formulas</li> </ul>	None	Supplement EA1-2 is provided for this. An additional resource would be found in the <i>ML Algebra 1 Chapter 3 Resource Book</i> – materials from Lesson 3.7. This is a critical skill for later work they will be doing. For a final chapter review, consider the <i>ML Chapter 3 Review Games and Activities</i> on p. 120 of the <i>ML Algebra 1 Chapter 3 Resource Book</i> .

3.1. Solve proportions including problems involving percent.	3 hours total	<ul style="list-style-type: none"> <li>• Ratio</li> <li>• Proportion</li> <li>• Rate (unit rate)</li> <li>• Dimensional analysis</li> </ul>	5.1	You may wish to divide this over several days – some on solving proportions, and the others on applications of proportions to conversion and rate problems. Be sure to address more complex problems like #30-36, as well as rate problems like #14, 15, 48. Students will need to review conversion charts for both English and Metric units. The Chapter 4 Open-Ended Assessment (found in the Assessment Master Book) is a good summary problem for using proportions to solve problems. Students will need to review conversion charts for both English and Metric units. THIS WHOLE CHAPTER ADDRESSES CAHSEE TOPICS.
3.2. Apply proportions to solve problems, including those involving similar figures.	3 hours total	<ul style="list-style-type: none"> <li>• Scale drawing</li> <li>• Scale</li> </ul>	5.2	Good scale model applications. See Enrichment 5.1 for a good summary problem. Question #6 on the Enrichment Master could be developed into a project.

3.1. Solve proportions including problems involving percent.	12 hours total	<ul style="list-style-type: none"> <li>• Percent</li> <li>• Percent proportion</li> <li>• Simple Interest</li> </ul>	5.3	<p>5.3: Be sure to assign all word problems. There are many different ways to teach application problems with percent. One approach is the percent proportion, as described in section 5.3. A second approach is the percent equation, as described in section 5.4. You may wish to focus on one or the other, so as not to unduly confuse the students.</p> <p>5.4: Go over examples 5 and 6 carefully (mixture problems). Students will revisit mixture problems when solving systems of equations, but this will be a good introduction.</p> <p>5.5: For overall review of percents, consider using <i>ML Algebra I Basic Skills Workbook</i> pp. 61-64. See also “EA-1 Match_Percent” Supplement found on First Class in the Supplement folder. This is a</p>
	5.3, 5.4 8 hrs		5.4	
	5.5 4 hrs		5.5	

Content Objective	Suggested Pacing	Essential Vocabulary	Suggested Aligned Resources	Comments: <b>common assessment 3: Nov.1 - 2 (section 5.3 – 5.7)</b> <b>Analyze: Nov. 19</b>
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Content Objective	Suggested Pacing	Essential Vocabulary	Suggested Aligned Resources	Comments: <b>common assessment 4 (E.O.C): Dec.11 - 13</b> <b>Analyze: Distict</b>
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3.3. Compute probability and odds of simple events and predict future outcomes.	7 hours total 5.6 3 hours 5.7 4 hours	<ul style="list-style-type: none"> <li>• Probability</li> <li>• Random</li> <li>• Theoretical probability</li> <li>• Experimental probability</li> <li>• Odds</li> <li>• Compound event</li> <li>• Independent events</li> <li>• Mutually exclusive</li> </ul>	5.6 5.7	5.6: Emphasize the difference between probability and odds. Probability is tested on the CAHSEE, so focus more energy there. Try the “Hands-On Algebra” activity described on p. 220. 5.7: Knowledge of standard deck of cards required for problems 5-8. Computing probabilities of compound events is tested on the CAHSEE. See CAHSEE released items for additional practice/review. Venn diagrams are a great way to approach probability, and to illustrate the formula given on p. 227 (note – this is an important formula for students to internalize).
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<p>2.2. Identify and analyze pertinent information with respect to relations, such as the domain and range of a relation given by a graph, table, or equation.</p> <p>4.5. Graph linear equations and inequalities in two variables, use these graphs to solve problems, and interpret the meaning of the shaded region for inequalities.</p>	<p>6 hours total</p> <p>6.1 3 hrs</p> <p>6.2 3 hrs</p>	<ul style="list-style-type: none"> <li>• Domain</li> <li>• Range</li> <li>• Relation</li> <li>• Function</li> <li>• x-coordinate</li> <li>• y-coordinate</li> <li>• Quadrants</li> <li>• x-axis</li> <li>• y-axis</li> <li>• Equation in two variables</li> <li>• Solution set</li> </ul>	<p>6.1</p> <p>6.2</p>	<p>6.1 – This is where you will review with the students how to plot points. You may refer back to text section 2.2 as an additional resource.</p> <p>6.2 – This section provides an opportunity to spiral in review of evaluating expressions and working with integers, as well as plotting points. Take your time here, and be sure to address many problems that require students to first “solve for y” before making their table (as in example 3).</p>
<p>4.5. Graph linear equations and inequalities in two variables, use these graphs to solve problems, and interpret the meaning of the shaded region for inequalities.</p>	<p>6 hours total</p>	<ul style="list-style-type: none"> <li>• Graphs of linear equations</li> <li>• Standard Form</li> </ul>	<p>6.3</p>	<p>Consider opening the lesson with ML Lesson 4.2 Activity Lesson Opener, on p. 27 of the Algebra 1 Chapter 4 Resource Book. In the Glencoe text, be sure to go over example 6 to review vertical and horizontal lines. The problems in this set get hard fast. The students will probably need more practice graphing simple equations – use Supplement EA1-3. Also see “Hands-on-Algebra” p. 73, Enrichment 6-3, and Study Guide 6-3. Students need to learn to isolate y before they make the tables.</p>

2.1. Determine whether a given relation defines a function.	3 hrs total	<ul style="list-style-type: none"> <li>• Function</li> <li>• Relation</li> <li>• Function notation</li> </ul>	6.4	<p>May want to supplement with more vertical line test problems. Also, try “Hands-on-Algebra” p. 74, and Practice 6-4.</p> <p>Be sure to address function notation and function value, as in examples 6-8. This provides another opportunity to spiral review operations with integers and rational numbers.</p>
4.5. Graph linear equations and inequalities in two variables, use these graphs to solve problems, and interpret the meaning of the shaded region for inequalities.	4 hrs total	<ul style="list-style-type: none"> <li>• Direct Variations</li> <li>• Constant of variation</li> <li>• Dependent variable</li> <li>• Independent variable</li> </ul>	6.5	<p>May want to supplement with more graphing application problems (like #33) – Supplement EA1-4 is provided for this. Consider opening with <i>ML Lesson 4.5 Activity Lesson Opener</i> on p. 67 of the Algebra 1 Chapter 4 Resource Book. Many students will not know how to answer question #5 on this – but have them try anyway!</p> <p>Connect the rate problems (examples 4-6) to the work done earlier with ratio and proportion. Emphasize writing and analyzing the units.</p>