SGO Example: Mathematics, Grade 6

Overview
This 6th grade mathematics teacher created his SGO to focus on the grade-level algebra content standards in order to prepare his students for continued success in this content strand throughout middle and high school. This SGO is aligned to the Common Core State Standards (CCSS) and uses several data points to determine each student's Preparedness Group (Measures of Academic Progress, Previous Grade Final, and Diagnostic). The teacher's choice to focus on this specific content strand is acceptable as his mSGP score will encompass student achievement on the broader grade-level content standards taught throughout the year.

Name	School	Grade	Course/Subject	Number of Students	Interval of Instruction
		6	Mathematics	60	9/14/15 to 4/29/16

Standards, Rationale, and Assessment Method
Name the content standards covered, state the rationale for how these standards are critical for the next level of the subject, other academic disciplines, and/or life/college/career. Name and briefly describe the format of the assessment method.

RATIONALE
This SGO focuses on the grade-level algebra content strand from the Common Core State Standards (CCSS), which includes all standards within the *Expressions and Equations* Domain for Grade 6. Algebraic thinking is a strand of mathematics that relies on a strong foundation built throughout elementary and middle school mathematics.

Throughout the *Expressions and* Equations Domain in Grade 6, students are required to (1) make connections between previous arithmetic understandings and algebraic representations, (2) write and solve equations and inequalities, and (3) represent relationships between variables. By focusing on these skills in Grade 6, student proficiency in algebraic thinking and skills is supported and will enable greater student achievement in their continued study of mathematics in high school. As argued by the National Council of Teachers of Mathematics (NCTM) in *Algebra as a Strand of School Mathematics for All Students*, students "[c]haracterizing algebra as a strand of the school curriculum highlights the power and usefulness of algebraic thinking and skills – proficiencies that open academic doors and are evident in many professions and careers. Such an algebra strand in the school curriculum is critical and is accessible for all students." The emphasis placed in grade 6 by this SGO will enable students to continue developing their understanding of this critical skill.

ASSESSMENT
The assessment of student learning in this SGO will be the Grade 6 Algebra Common Assessment created by the Grade 6 Team. The format of the 50 point assessment is: 10 Selected Response – Multiple Choice (1 point items), 10 Constructed Response (2 point items), and 2 Performance Tasks (10 point items). See attached Assessment Blueprint for details.

STANDARDS
The following Grade 6 CCSS are assessed in this SGO:

6.EE.1: Write and evaluate numerical expressions involving whole-number exponents.

6.EE.2: Write, read, and evaluate expressions in which letters stand for numbers.

6.EE.2a: Write expressions that record operations with numbers and with letters standing for numbers.

6.EE.2b: Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.

6.EE.2c: Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).

6.EE.3: Apply the properties of operations to generate equivalent expressions.

6.EE.4: Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).

6.EE.5: Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

6.EE.6: Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

6.EE.7: Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.

6.EE.8: Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

6.EE.9: Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.

Important items to note about this SGO are explicit standards to be assessed, appropriate reference to the Assessment Blueprint to demonstrate the assessment plan, and a detailed explanation for why this content was chosen. The teacher may want to explain how this content will be woven throughout the academic year, especially since he identifies the interval of instruction to be the entire school year. He may also want to explain in greater detail how these standards, which cover approximately 20% of the grade-level content, relate to the other grade-level standards.

Starting Points and Preparedness Groupings
State the type of information being used to determine starting points and summarize scores for each type by group. Modify the table as needed.

Preparedness Group	Information #1	Information #2	Information #3
	Fall MAP Math RIT (Percentile)	Grade 5 Math Final (Percent Correct)	Grade 6 Algebra Diagnostic (Percent Correct)
Remedial	<41	<61	<56
Low	41-60	61-70	56-70
Average	61-80	71-80	71-85
High	81-100	91-100	86-100

For students whose placement differs based on these data, the student will be placed in the Average Preparedness Group. Students will be placed in the Low or the High Preparedness Groups only if all three Information data place the student in those groups. The Remedial Preparedness Group has been specifically created to address the needs of a group of 6 students who have entered sixth-grade more than two grade levels behind.

The teacher has created a logical system to create Preparedness Groups and has created a particular group to meet the needs of a subset of his students who are more than two grade levels behind. This is a technique that could be used by other teachers who have very high students, where the teacher may want to create a specific Preparedness Group to meet the acceleration needs of those students.

Student Growth Objective
State simply what percentage of students in each preparedness group will meet what target in the space below, e.g. "75% of students in each group will meet the target score." Describe how the targets reflect ambitious and achievable scores for these students. Use the table to provide more detail for each group. Modify the table as needed.

Eighty percent of students in each group will score at their target level as described in the table below on the End of Unit Algebra Common Assessment.

Although the Target Score on the SGO Assessment for the Remedial Preparedness Group is not passing on a grading scale, it is appropriate for these students. Their placement is adequately justified and the scoring target represents significant growth for this subset.

Preparedness Group (e.g. 1,2,3)	Number of Students in Each Group	Target Score on SGO Assessment
Remedial	6	60%
Low	19	80%
Average	24	85%
High	11	90%

Scoring Plan
State the projected scores for each group and what percentage/number of students will meet this target at each attainment level. Modify the table as needed.

Preparedness Group	Student Target Score	Teacher SGO Score Based on Percent of Students Achieving Target Score			
		Exceptional (4)	Full (3)	Partial (2)	Insufficient (1)
Remedial	60%	≥ 90%	≥ 80%	≥ 70%	< 70%
Low	80%	≥ 90%	≥ 80%	≥ 70%	< 70%
Average	85%	≥ 90%	≥ 80%	≥ 70%	< 70%
High	90%	≥ 90%	≥ 80%	≥ 70%	< 70%

Approval of Student Growth Objective
Administrator approves scoring plan and assessment used to measure student learning.

Teacher _____   Signature_____   Date Submitted_____

Evaluator _____   Signature _____   Date Approved _____

Results of Student Growth Objective
Summarize results using weighted average as appropriate. Delete and add columns and rows as needed.

Preparedness Group	Students at Target Score	Teacher SGO Score	Weight (based on students per group)	Weighted Score	Total Teacher SGO Score
Remedial	5/6 (83.3%)	3	0.10	0.30	
Low	18/19 (94.7%)	4	0.32	1.28	
Average	18/24 (75.0%)	2	0.40	0.80	2.6
High	6/11 (54.5%)	1	0.18	0.18	

Notes
Describe any changes made to SGO after initial approval, e.g. because of changes in student population, other unforeseen circumstances, etc.

Review SGO at Annual Conference
Describe successes and challenges, lessons learned from SGO about teaching and student learning, and steps to improve SGOs for next year.

Teacher _____   Signature _____   Date _____

Evaluator _____   Signature _____   Date _____