7th Grade Module 3 – Expressions and Equations

	4 - Mastery	3 - Proficient	2 - Basic	1 - Below Basic	0 - No Evidence
Topic A (7. EE.1 and 7.EE.2)	Meets **all** of the criteria in a Level 3 **Completes tasks including synthesis and evaluation**	Apply properties to all of the following situations: • Adding • Subtracting • Factoring • Expanding expressions with **rational numbers** Write an algebraic expression in different forms for a real world problem **and explain the expressions in context of the situation**	Apply properties to **all** of the following situations: • Adding • Subtracting • Factoring • Expanding expressions with integers Write an algebraic expression **in different forms** for a real world problem	Apply properties to **two** of the following situations: • Adding • Subtracting • Factoring • Expanding expressions with **integers** Write an algebraic expression for a real world problem	**Shows no evidence of proficiency** Little evidence of reasoning or application to solve the problem.
Topic B (7.EE.3, 7.EE.4, 7.G.5)	Meets **all** of the criteria in a Level 3 **Completes tasks including synthesis and evaluation**	Write and solve **equations** containing **rational** numbers in context of a situation and be able to compare the algebraic solution to an arithmetic solution by identifying the operations used. Write and solve **inequalities** containing **rational** numbers in context of a situation and graph the solution set on a number line. Use supplementary, complementary, vertical, and adjacent angle relationships to write an equation and determine an unknown angle in a **multi-step problem.**	**Write** and solve **equations** containing **integer** numbers in **context of a situation** and be able to compare the algebraic solution to an arithmetic solution by identifying the operations used. **Write** and solve **inequalities** containing **integer** numbers in **context of a situation** and graph the solution set on a number line. Use supplementary, complementary, vertical, and adjacent angle relationships to **write an equation and determine an unknown angle.**	Solve **equations** containing **integer** numbers . Solve **inequalities** containing **integer** numbers. **Identify** angle relationships such as supplementary, complementary, vertical, and adjacent**.**	**Shows no evidence of proficiency** Little evidence of reasoning or application to solve the problem.
Topic C (7.G.4, 7.G.6)	Meets **all** of the criteria in a Level 3 **Completes tasks including synthesis and evaluation**	Can solve problems involving circumference and area of circles and **explain the relationship between the circumference and area of a circle** Solve real-world problems involving area, volume **and** surface area of objects made from triangles, quadrilaterals, polygons, cubes, and right prisms	Can solve problems involving circumference **and** area of circles Solve real-world problems involving area, **and volume or surface area** of objects made from triangles, quadrilaterals, polygons, cubes, and right prisms	Can solve problems involving circumference **or** area of circles. Solve real-world problems involving **area** of objects made from triangles, quadrilaterals, and polygons	**Shows no evidence of proficiency** Little evidence of reasoning or application to solve the problem.

7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

7.EE.A.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.

7.EE.B.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.
 a.   Solve word problems leading to equations of the form and, where, , and are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is cm. Its length is cm. What is its width?*
 b.   Solve word problems leading to inequalities of the form and , where , , and are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.

7.G.B.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and use them to solve simple equations for an unknown angle in a figure.

7.G.B.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.

7.G.B.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.