Amarillo Independent School District follows the Texas Essential Knowledge and Skills (TEKS). All of AISD curriculum and documents and resources are aligned to the TEKS.

The State of Texas State Board of Education has defined the focal points for Grade 4 mathematics in the first paragraph of the introduction to the Texas Essential Knowledge and Skills.

Throughout mathematics in Grades 3-5, students build a foundation of basic understandings in number, operation, and quantitative reasoning; patterns, relationships, and algebraic thinking; geometry and spatial reasoning; measurement; and probability and statistics. Students use algorithms for addition, subtraction, multiplication, and division as generalizations connected to concrete experiences; and they concretely develop basic concepts of fractions and decimals. Students use appropriate language and organizational structures such as tables and charts to represent and communicate relationships, make predictions, and solve problems. Students select and use formal language to describe their reasoning as they identify, compare, and classify two- or three-dimensional geometric figures; and they use numbers, standard units, and measurement tools to describe and compare objects, make estimates, and solve application problems. Students organize data, choose an appropriate method to display the data, and interpret the data to make decisions and predictions and solve problems.

Unit 1— Place Value / Addition / Subtraction / Problem Solving
Unit 2 – Multiplication / Division and Probability
Unit 3 – Multiplication / Division and Time
Unit 4 – Measurement
Unit 5 – Fractions and Geometry
Unit 6 – Looking ahead to 5th Grade
### Second Semester ONLY

**Unit 4 – Measurement**  
6 Weeks, Jan. 2 – Feb. 14, 2014

- Measurement requires an understanding of the relationship among units
- The number of weight or mass units can be determined by reading a measuring tool

| MA.4.11 Measurement | (A) estimate and use measurement tools to determine length (including perimeter), area, capacity and weight/mass using standard units SI (metric) and customary;  
| | (B) perform simple conversions between different units of length, between different units of capacity, and between different units of weight within the customary measurement system;  
| | (C) use concrete models of standard cubic units to measure volume;  
| | (D) estimate volume in cubic units; and  
| | (E) explain the difference between weight and mass |

| MA.4.12 Measurement | (A) use a thermometer to measure temperature and changes in temperature; |

| MA.4.15 Underlying processes and mathematical tools | (A) explain and record observations using objects, words, pictures, numbers, and technology |

**New TEKS to Bridge for Unit 4**

| MA.4.05 Algebraic reasoning | (C) use models to determine the formulas for the perimeter of a rectangle \((l + w + l + w)\) or \(2l + 2w\), including the special form for perimeter of a square (\(4s\)) and the area of a rectangle \((l \times w)\); and  
| | (D) solve problems related to perimeter and area of rectangles where dimensions are whole numbers. |
### MA.4.08 Geometry and measurement. The student applies mathematical process standards to select appropriate customary and metric units, strategies, and tools to solve problems involving measurement. The student is expected to:

- (A) identify relative sizes of measurement units within the customary and metric systems;
- (B) convert measurements within the same measurement system, customary or metric, from a smaller unit into a larger unit or a larger unit into a smaller unit when given other equivalent measures represented in a table; and
- (C) solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate.

### Unit 5 – Fractions and Geometry
8 Weeks, Feb. 17 – Apr. 18, 2014

- There is a need to be able to identify, read, write, and compare numbers beyond whole numbers
- Relationships between geometric figures can be described and compared
- Geometric figures can be described, compared, and transformed using symmetry and congruence

### MA.4.02 Number, operation, and quantitative reasoning. The student describes and compares fractional parts of whole objects or sets of objects. The student is expected to:

- (A) use concrete objects and pictorial models to generate equivalent fractions;
- (B) model fraction quantities greater than one using concrete objects and pictorial models;
- (C) compare and order fractions using concrete objects and pictorial models;
- (D) relate decimals to fractions that name tenths and hundredths using concrete objects and pictorial models.

### MA.4.03 Number, operation, and quantitative reasoning. The student adds and subtracts to solve meaningful problems involving whole numbers and decimals. The student is expected to:

- (B) add and subtract decimals to the hundredths place using concrete objects and pictorial models.

### MA.4.08 Geometry and spatial reasoning. The student identifies and describes attributes of geometric figures using formal geometric language. The student is expected to:

- (A) identify and describe right, acute, and obtuse angles;
- (B) identify and describe parallel and intersecting (including perpendicular) lines using concrete objects and pictorial models; and
- (C) use essential attributes to define two- and three-dimensional geometric figures

### MA.4.09 Geometry and spatial reasoning. The student connects transformations to congruence and symmetry. The student is expected to:

- (A) demonstrate translations, reflections, and rotations using concrete models;
- (B) use translations, reflections, and rotations to verify that two shapes are congruent; and
- (C) use reflections to verify that a shape has symmetry

### MA.4.10 Geometry and spatial reasoning. The student recognizes the connection between numbers and their properties and points on a line. The student is expected to
locate and name points on a number line using whole numbers, fractions such as halves and fourths, and decimals such as tenths.

| MA.4.15 Underlying processes and mathematical tools. The student communicates about Grade 4 mathematics using informal language. The student is expected to: | (A) explain and record observations using objects, words, pictures, numbers, and technology; and  
(B) relate informal language to mathematical language and symbols |
|---|---|
| MA.4.16 Underlying processes and mathematical tools. The student uses logical reasoning. The student is expected to: | (A) make generalizations from patterns or sets of examples and nonexamples; and  
(B) justify why an answer is reasonable and explain the solution process |

**New TEKS to Bridge for Unit 5**

| MA.4.02 Number and operations. The student applies mathematical process standards to represent, compare, and order whole numbers and decimals and understand relationships related to place value. The student is expected to: | (A) interpret the value of each place-value position as 10 times the position to the right and as one-tenth of the value of the place to its left;  
(G) relate decimals to fractions that name tenths and hundredths; and  
(H) determine the corresponding decimal to the tenths or hundredths place of a specified point on a number line. |
|---|---|
| MA.4.03 Number and operations. The student applies mathematical process standards to represent and generate fractions to solve problems. The student is expected to: | (A) represent a fraction \( \frac{a}{b} \) as a sum of fractions \( \frac{1}{b} \), where \( a \) and \( b \) are whole numbers and \( b > 0 \), including when \( a > b \);  
(B) decompose a fraction in more than one way into a sum of fractions with the same denominator using concrete and pictorial models and recording results with symbolic representations;  
(C) determine if two given fractions are equivalent using a variety of methods;  
(D) compare two fractions with different numerators and different denominators and represent the comparison using the symbols \( > \), \( = \), or \( < \);  
(E) represent and solve addition and subtraction of fractions with equal denominators using objects and pictorial models that build to the number line and properties of operations;  
(F) evaluate the reasonableness of sums and differences of fractions using benchmark fractions 0, \( \frac{1}{4} \), \( \frac{1}{2} \), \( \frac{3}{4} \), and 1, referring to the same whole; and |
### MA.4.06 Geometry and measurement.
The student applies mathematical process standards to analyze geometric attributes in order to develop generalizations about their properties. The student is expected to:

- (A) identify points, lines, line segments, rays, angles, and perpendicular and parallel lines;
- (B) identify and draw one or more lines of symmetry, if they exist, for a two-dimensional figure;
- (C) apply knowledge of right angles to identify acute, right, and obtuse triangles; and
- (D) classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size.

### MA.4.07 Geometry and measurement.
The student applies mathematical process standards to solve problems involving angles less than or equal to 180 degrees. The student is expected to:

- (A) illustrate the measure of an angle as the part of a circle whose center is at the vertex of the angle that is "cut out" by the rays of the angle. Angle measures are limited to whole numbers;
- (B) illustrate degrees as the units used to measure an angle, where 1/360 of any circle is one degree and an angle that "cuts" n/360 out of any circle whose center is at the angle's vertex has a measure of n degrees. Angle measures are limited to whole numbers;
- (C) determine the approximate measures of angles in degrees to the nearest whole number using a protractor;
- (D) draw an angle with a given measure; and
- (E) determine the measure of an unknown angle formed by two non-overlapping adjacent angles given one or both angle measures.

### Unit 6 – Looking ahead to 5th Grade

- Learn how math is used in daily life.

### MA.5.03 Number, operation, and quantitative reasoning.
The student adds, subtracts, multiplies, and divides to solve meaningful problems. The student is expected to:

- (A) use addition and subtraction to solve problems involving whole numbers and decimals;
- (B) use multiplication to solve problems involving whole numbers (no more than three digits times two digits without technology);
- (C) use division to solve problems involving whole numbers (no more than two-digit divisors and three-digit dividends without technology), including interpreting the remainder within a given context;
Amarillo ISD— _Grade 4_ Standards

To ensure that every student has an opportunity to learn, understand and demonstrate the Texas Essential Knowledge and Skills. Amarillo Independent has adopted the following protocols for teachers, curriculum and others to use in reference to Curriculum, Instruction and Assessment.

**Curriculum**
1) Prioritize essential learning based on AISD written curriculum and adhere to the scope and sequence.
2) Develop deep understandings of the AISD written curriculum with an emphasis on the essential learning outcomes.
3) Create relevant learning environments in every classroom using the AISD written curriculum.
4) Analyze vertical and horizontal alignment to ensure grade level curriculum is being taught.

**Instruction**
1) Common lessons are developed based on strategically selected grade level TEKS and include learning opportunities for students that:
   - are at the expected level of thinking and rigor
   - utilize research based instructional strategies
   - are actively engaging
   - have real world applications
2) Collaboratively align instruction to assessment.
3) Individual student instructional needs are considered and addressed in the lessons.
4) Strategic re-teaching when students do not understand.
5) Common lessons are analyzed and strengthened through a continuous improvement process such as the Professional Teaching Model, Lesson Study or other method for collaborative study and sharing.

**Assessment**
1) Collaboratively align all assessment to the AISD written curriculum and reflect appropriate rigor.
2) Collaboratively engage in purposeful dialogue about assessment tied to clearly defined essential learning outcomes.
3) Continuously improve and adjust instruction based on common assessment results and student work.
4) Provide feedback to the annual curriculum feedback and revision process.