ALPHA PLUS

TEACHER'S GUIDE

Math K

SUCCESS with OAS

Oklahoma Academic Standards

TEACHER'S GUIDE

SUCCESS with OAS

SAMPLE FOR REVIEW

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Math K

Ensuring Student Success *with* Oklahoma Academic Standards

Written by Oklahoma Teachers for Oklahoma Teachers

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SUCCESS with OAS

Math K by Kimberly King

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FOREWORD

Adopted in 2016 by the State Board of Education, the Oklahoma Academic Standards (OAS) mathematics objectives are measurably more rigorous in content and different in terms of vertical alignment than previous curriculum frameworks.

Immediately, Alpha Plus Educational Systems sought highly qualified teachers to develop a teaching and learning resource specifically aligned to the new standards. CEO Jan Barrick also enlisted my help and that of Dr. Frank Wang, President of the Oklahoma School of Science and Mathematics (OSSM), who is a nationally known, accomplished mathematics educator and an experienced textbook publisher. It has been my pleasure to help ensure the content is of high quality and will provide a solid mathematical foundation.

Written by Oklahoma teachers for Oklahoma teachers, the *Success with OAS: Alpha Plus Mathematics* series provides a robust set of resources relating mathematical skills to the real world of Oklahoma students.

-- Edna McDuffie Manning, *EdD., Mathematics*
Founder and President Emerita, Oklahoma School of Science and Mathematics

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INTRODUCTION

The *Success with OAS: Alpha Plus Mathematics* framework for instruction, independent student work, and continuous review will prepare students for comprehensive assessments at each grade level. Following is a summary addressing the most effective way to use each element.

Teacher's Guide

Objective Statement: At the beginning of each lesson, the OAS objective is stated as adopted. This is helpful when writing lesson plans and understanding the focus of the lesson.

Real-World Connections: Students must be engaged and must relate the concept to their daily lives. Connecting to a real-world application taps into students' prior knowledge and shows the practicality behind the concept. It is suggested that the teacher start with a relevant, age-appropriate game, class discussion, website or video, role-play, or other group activity. This will illustrate the need to learn the skill so that students can use it in their daily lives.

Vocabulary: A list of vocabulary words critical to each OAS Objective is provided, particularly those used in the state's *Test and Item Specifications*. A complete vocabulary definition can be found in the student workbook and in the comprehensive Glossary at the end of the book.

Modeling: The Modeling section provides step-by-step instructions for one or more ways to teach the objective and the skills related to the lesson. Teachers may use this to direct students and add more examples or details as needed for the teachers' lesson plans.

Extension Activities: This is a list of possible resources to enhance the objective lesson. Every author provided links to tools they use in class, to online content available at no charge for teacher use, and to other lesson-planning resources.

Answer Key: Every Teacher's Guide includes a complete Answer Key for each assessment item in the student workbook. The Answer Key for the Continuous Review designates what objectives are assessed.

Comprehensive Examination: A Comprehensive Examination was developed to resemble the state assessment and encompasses every objective taught. It can be used as a pre-test and post-test for the school year to better prepare students for state-mandated tests. The Answer Key provides the answers with objective numbers.

Student Workbook

Objective Statement: At the beginning of each student lesson is the objective statement. It clearly defines the focus of the lesson.

Real-World Connections: Written in age-appropriate language, this section reminds students of prior knowledge they have on the topic and how they might use this skill in their daily lives. Relevance is essential to student engagement in the lesson. Teachers can highlight this scenario for the students with a game, role-play, or other group activity.

Vocabulary: Each lesson includes a vocabulary list with definitions for the words the students will encounter on state assessments. Students should also learn to use the Glossary in the back of the book.

Guided Practice: Every objective lesson includes a Guided Practice, which is a set of items available for use in class as part of, or after, instruction. The ten practice problems reflect every skill students will use when they work independently.

Independent Practice: The Independent Practice is a series of twenty questions and activities the student may do independently, either in the classroom or for homework. The Independent Practice can also be used for reinforcement or review as needed.

Continuous Review: At the end of each lesson, there is a Continuous Review with ten questions covering objectives taught previously in the book or aligned to key skills from previous grade level(s). The Answer Key designates the objective each question assesses. The Continuous Review is in sequence after each objective lesson or can be used as a weekly assessment to reinforce past skills.

ALPHA PLUS Educational Systems

OAS Mathematics Table of Contents Kindergarten

ALPHA PLUS Educational Systems

OAS Mathematics Table of Contents Kindergarten

Teacher's Guide

K.GM.3.1 Develop an awareness of simple time concepts using words such as yesterday, today, tomorrow, morning, afternoon, and night within his/her daily life.

Real-World Connections

The student will develop an awareness of time concepts in his/her daily life. The following questions help access students' prior knowledge of time concepts:

What time of day do you eat breakfast (morning)?

What time of day do you eat lunch (afternoon)?

What time do you go to bed (night)?

What day is today? Yesterday? Tomorrow?

Vocabulary

morning, afternoon, night, today, yesterday, tomorrow, calendar

Modeling

Step 1: Introduce vocabulary using picture cards. Add them to the math word wall.

Step 2: This objective is best taught during morning group time. Show and discuss pictures of getting out of bed, sleeping in the dark, getting on the school bus. Make a chart listing other activities one might do at different times of the day.



Example:	**Morning**	**Afternoon**	**Night/Evening**
	get dressed	eat a lunch	take a bath
	eat breakfast	play at recess	read a book in bed
	ride the bus	art center	play in a baseball game

Step 3: Practice saying the days of the week in order while a student points to a calendar. There are several songs and chants that can be utilized to practice this skill. When looking at a calendar, make sure the students know that Saturday comes before Sunday.

Step 4: Have a student point to today, yesterday, and tomorrow on the calendar. Discuss how things that happened before today, happened **yesterday,** things that are happening right now are happening **today**, and things we plan to do will happen **tomorrow**.

Extension Activities

Manipulatives— pointers, calendar, cards with the days of the week and times of the day printed on them.

Centers— Students use pointers to practice saying the days of the week. Sort picture cards under the headings of Morning (1/2 sun picture), Afternoon (full sun picture), Night (moon picture). Put "days of the week" cards in order.

Website—

Oklahoma State Department of Education objective analysis of K.GM.3.1

http://okmathframework.pbworks.com/w/page/113060011/K-GM-3-1

Answer Key K.GM.3.1

Guided Practice

1. Friday, Sunday
2. Sunday, Tuesday
3. Wednesday, Friday
4. Thursday, Saturday
5. Tuesday, Thursday
6. Saturday, Monday
7. Monday, Wednesday
8. night
9. morning
10. afternoon

Independent Practice

1. Tuesday, Thursday
2. Thursday, Saturday
3. Monday, Wednesday
4. Wednesday, Friday
5. Sunday, Tuesday
6. Friday, Sunday
7. 
8. 
9. 
10. 
11. 
12. 
13. 
14. 

Answer Key K.GM.3.1

Independent Practice

15. 

16. 

17. 

18. 

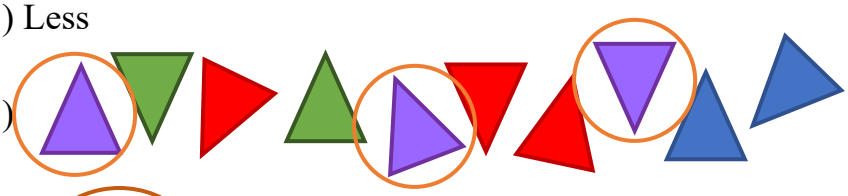
19. 

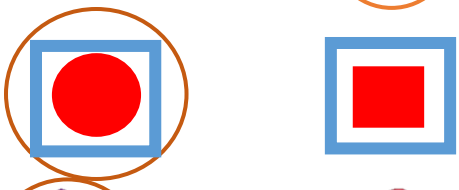
20. 

Continuous Review

1. (PK.N.3.1) More

2. (PK.N.3.1) Less

3. (PK.A.1.1) 

4. (PK.A.1.1) 

5. (PK.A.1.1) 

6. (K.GM.3.1) Friday, Sunday

7. (K.GM.3.1) Tuesday, Thursday

8. (K.GM.3.1) 

9. (K.GM.3.1) 

10. (K.GM.3.1) 

Guided Practice Name: _____

K.GM.3.1 Develop an awareness of simple time concepts using words such as yesterday, today, tomorrow, morning, afternoon, and night within his/her daily life.

Real-World Connections

What time of day do you eat breakfast (morning)?

What time of day do you eat lunch (afternoon)?

What time do you go to bed (night)?

What day is today?

What day is yesterday?

What day is tomorrow?

Use the calendar to answer the questions.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

	Yesterday was…	Today is…	Tomorrow will be…
1.	_____	Saturday	_____
2.	_____	Monday	_____
3.	_____	Thursday	_____

Guided Practice (K.GM.3.1) Name: _____

Use the calendar to answer the questions.

	Yesterday was…	Today is…	Tomorrow will be…
4.	_____	Friday	_____
5.	_____	Wednesday	_____
6.	_____	Sunday	_____
7.	_____	Tuesday	_____

8-10. Draw a line from the picture to the correct time of day.

8. 

9. 

10. 

Independent Practice Name: _____

K.GM.3.1 Develop an awareness of simple time concepts using words such as yesterday, today, tomorrow, morning, afternoon, and night within his/her daily life.

Use the calendar to answer the questions.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

Example:

Yesterday was…	Today is…	Tomorrow will be…
Saturday	Sunday	Monday

	Yesterday was…	Today is…	Tomorrow will be…
1.		Wednesday	
2.		Friday	
3.		Tuesday	

Independent Practice (K.GM.3.1) Name: _____

Use the calendar to answer the questions.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

	Yesterday was…	Today is…	Tomorrow will be…
4.	_____	Thursday	_____
5.	_____	Monday	_____
6.	_____	Saturday	_____

7-20. Draw a line from the picture to the correct time of day.


morning


afternoon


night

Example:

Independent Practice (K.GM.3.1) Name: _____

7-20. Draw a line from the picture to the correct time of day.


morning


afternoon


night

7.		
8.		
9.		
10.		
11.		

Independent Practice (K.GM.3.1) Name: _____

12-20. Draw a line from the picture to the correct time of day.


morning


afternoon


night

12.		
13.		
14.		
15.		
16.		

Independent Practice (K.GM.3.1) Name: _____

17-20. Draw a line from the picture to the correct time of day.


morning


afternoon


night

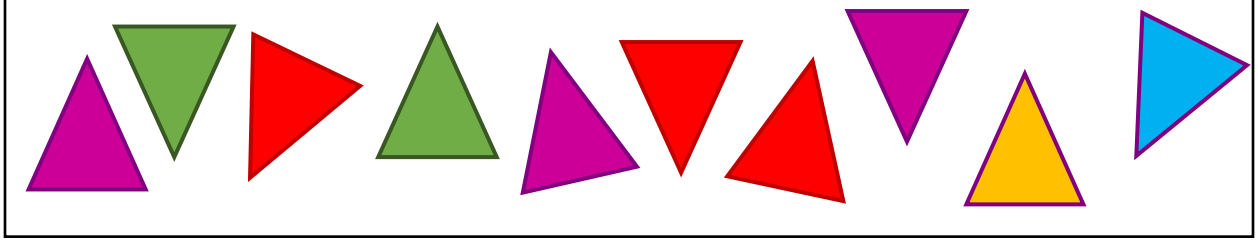
17.		
18.		
19.		
20.		

Continuous Review (K.GM.3.1) Name: _____

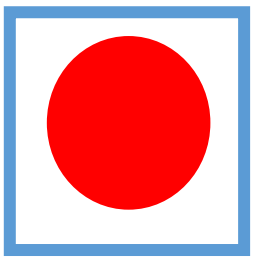
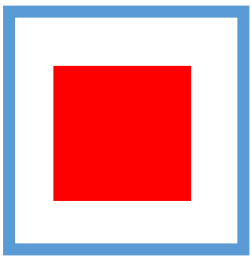
Does the container on the left hold more, less, or the same amount as the container on the right? Circle your answer.

1.		more less the same	
2.		more less the same	

3. Circle the purple triangles.



Circle the picture that has a red circle in a square.

4.  

Circle the picture that has more than 2 flowers?

5.  

Continuous Review (K.GM.3.1) Name: _____

6-10. Use the calendar to answer the questions.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

	Yesterday was…	Today is…	Tomorrow will be…
6.	_____	Saturday	_____
7.	_____	Wednesday	_____

8-10. Draw a line from the picture to the correct time of day.

8. 

9. 

10. 

morning
afternoon
night

KINDERGARTEN COMPREHENSIVE ASSESSMENT

Comprehensive Assessment K Name _____

Color in the circle beside the correct answer.

What is the time of day?

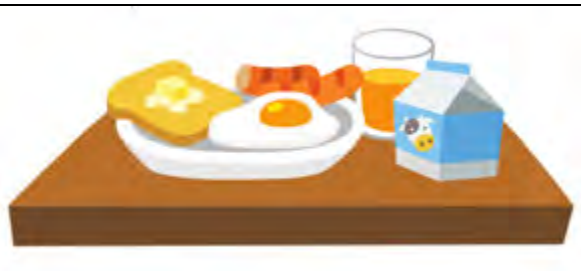
1.

○ 

○ 

○ 

2.



○ 

○ 

○ 

Comprehensive Assessment K Name _____

Color in the circle beside the correct answer.

3. If today is Tuesday, what was yesterday?

- ◯ Monday
- ◯ Tuesday
- ◯ Wednesday
- ◯ Thursday

4. If today is Tuesday, what will tomorrow be?

- ◯ Monday
- ◯ Tuesday
- ◯ Wednesday
- ◯ Thursday

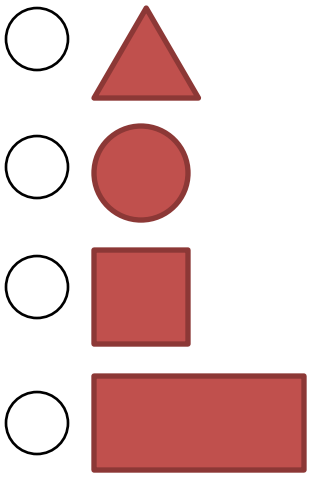
5. Choose the circle.

- ◯ 
- ◯ 
- ◯ 
- ◯ 

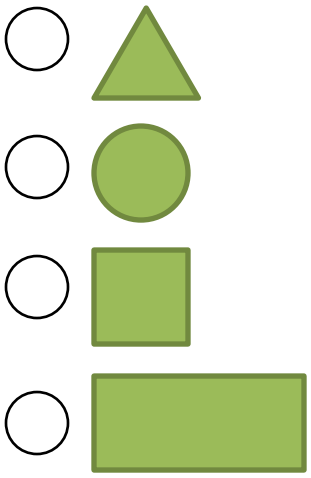
Comprehensive Assessment K Name _____

Color in the circle beside the correct answer.

6. Choose the triangle.



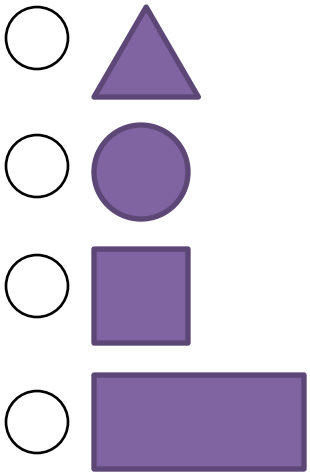
7. Choose the square.



Comprehensive Assessment K Name _____

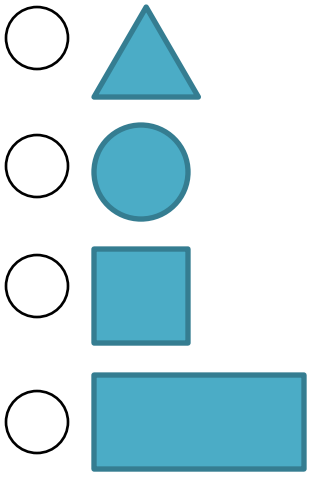
Color in the circle beside the correct answer.

8. Choose the rectangle.



Choose the shape that matches the real-world object.

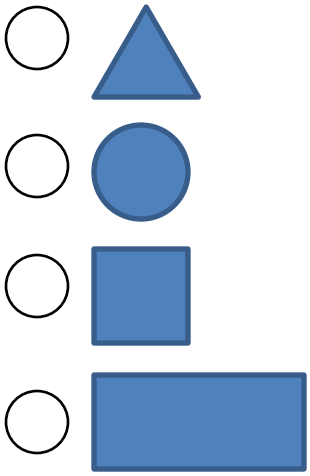
9. 



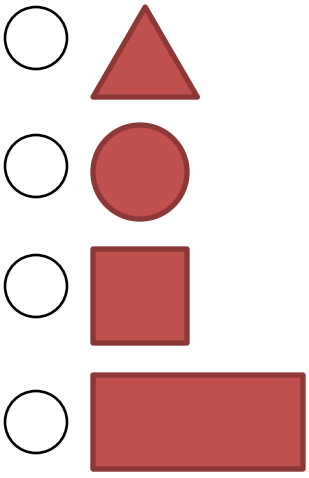
Comprehensive Assessment K Name _____

Choose the shape that matches the real-world object.

10.

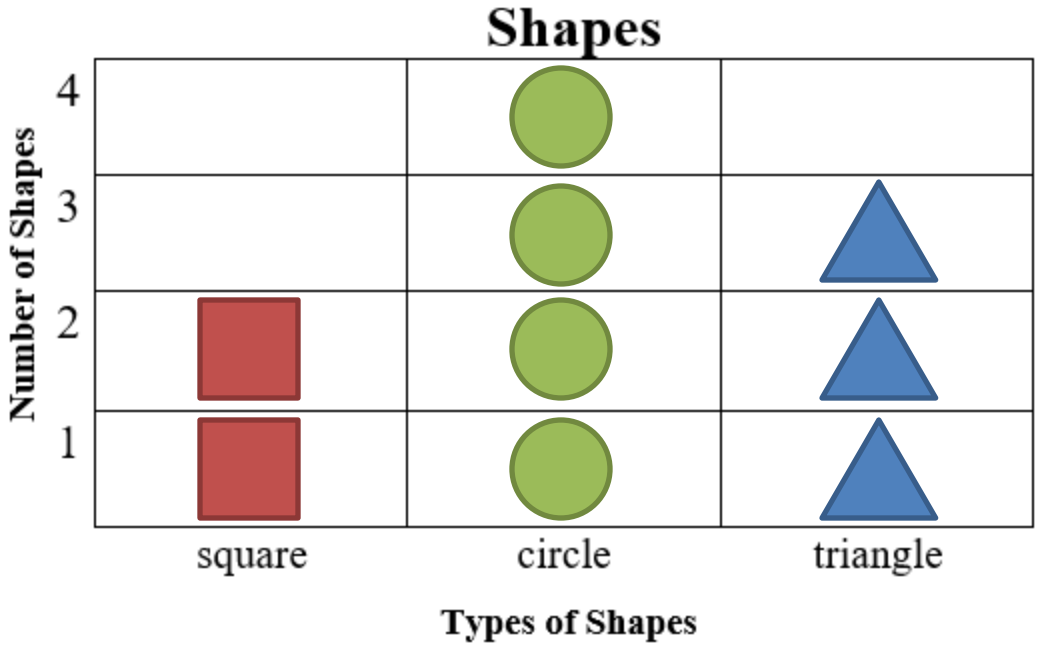


11.



Comprehensive Assessment K Name _____

Read the graph. Answer the questions.



50. What shape is shown the least?

- ◯ square
- ◯ circle
- ◯ triangle

OAS Mathematics Glossary

A

acute angle: an angle with a measure greater than 0° but less than 90°
addends: are the digits in an addition problem that are being added
absolute value: the absolute value of a real number is its (non-negative) distance from 0 on a number line; this is also known as magnitude
addition: to join two or more numbers or quantities to get one number called a sum or total
additive comparison problems: the underlying question is what amount would be added to one quantity to result in the other
algebraic expression: a mathematical phrase combining numbers and/or variables; an expression does not contain equality or inequality signs but may include other operators and grouping symbols; both sides of an equation are expressions
algebraic equation: includes mathematical signs, symbols, and numbers connected with an equal sign (=); an algebraic equation contains an equal sign
algorithm: a step-by-step process for solving a problem
angle: a figure formed by two rays with a common endpoint called the vertex and it is measured in degrees (°)
angle ruler: similar to a protractor and is used to measure and draw angles
analog clock: a clock with hour, minute, and, sometimes, second hands
approximation: the estimate a number, amount or total, often rounding it off to the nearest 10 or 100
area: the space occupied by a flat shape (closed two-dimensional shape) or the surface of an object; the number of unit squares that cover the surface of a closed figure; measured in square units such as square centimeters, square feet, square inches, etc.
area models: a model using area to show multiplication or division
area of a circle: the area of the interior of the circle, which can be found with $A=\pi r^2$ where r is the radius and π the irrational number "pi"
area of a parallelogram: the area of the interior of the parallelogram; is measured in square units; can be found by using the formula $A= bh$
area of similar triangles: if two similar triangles have sides in the ratio x:y, then their areas are in the ratio x^2:y^2
area of a square or rectangle: the area of the interior of the square or rectangle; is measured in square units; can be found by using the formula $A = l \, x \, w$ or $A= lw$; area of a square can also be found using the formula $A = s^2$
area of a trapezoid: the sum of its bases multiplied by the height of the trapezoid then divided by 2; the area is measured in square units and can be found using the formula $A = \frac{1}{2}(b_1 + b_2)h$

OAS Mathematics Glossary

area of triangles: amount of surface a triangle covers and measured in square units; can be found using the formula $A = \frac{1}{2}bh$
arrays: an orderly arrangement of objects arranged in rows or columns
ascending: increasing in size
ascending order: numbers arranged from smallest to largest
associative property of addition: states that the sum remains the same regardless of how they are grouped, (a + b) + c = a + (b +c)
associative property of multiplication: states that the product remains the same regardless of how they are grouped, (a × b) × c = a × (b × c)
attributes: characteristics
average: a number expressing the central or typical value in a set of data, in particular- the mode, median, or most commonly the mean, which is found by dividing the sum of the values in the set by the number of values in the set
axis: a real or imaginary reference line

B

bar graph: a graph that compares data from several situations using vertical or horizontal bars
bar notation: a horizontal bar over decimals to indicate that they repeat
base: the number or variable representing the factor being multiplied
base area: the area of the base denoted with *B*
base 10 blocks: blocks which show base-10 number values
base of a figure: a face on which the 3D figure sits
benchmark: something by which other things can be measured or compared
benchmark fractions: fractions that are easy to visualize or represent, such as, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$, and $\frac{3}{4}$
biased: sample in which individuals, items, or data were not equally likely to have been chosen
box and whisker plot: a diagram or graph using a number line to show the distribution of a set of data which displays the median, upper and lower quartiles, and the maximum and minimum values of the data

C

calculate: to work something out, a mathematical operation
calculator: electronic device used for making mathematical calculations
capacity: the maximum amount or number that can be contained or accommodated
cent: equals one hundredth of a dollar (100 cents equal one dollar)
centimeter: a length of measurement that is equal to 1/100 (0.01) of a meter; it is part of the metric system of measurement, which is used around the world

OAS Mathematics Glossary

transversal: a line that cuts across two or more (usually parallel) lines
trapezoid: a quadrilateral only having two sides that are parallel
tree diagram: a diagram shaped like a tree used to display sample space by using one branch for each possible outcome in a probability exercise
triangle: a polygon with three sides
triangular prism: a solid figure with two faces that are triangles
triangular pyramid: a solid figure where all the faces are triangles
two-dimensional figure: a figure having two dimensions of length and width
two-step operation: an equation that takes two steps to solve

U

unknowns: are letters that represent a number that you do not know or an unknown quantity
unit fractions: a fraction with a numerator of 1, such as $\frac{1}{3}$ or $\frac{1}{5}$
unit pricing: a unit price compares the price of something to a unit of measurement; for example, cost per kilogram or cost per liter or gallon
unit rate: a comparison of two measurements in which one of the terms has value of one
upper quartile: the median of the upper half of data (Q2)

V

value: the numerical worth or amount
variable: a symbol used to represent a quantity that can vary, or change; usually a letter but may also be a picture or box
Venn diagram: a diagram that uses circles that overlap to organize and show data
vertex: the point at which two or more-line segments, edges, lines, or ray meet to form an angle (plural: vertices)
vertical: in an up-down direction or position; upright.
vertical angles: pairs of opposite congruent angles formed by the intersection of straight lines and they share a common vertex
vertices: a point where:

- two or more rays or the sides of an angle meet
- the adjacent sides of a polygon meet
- the edges of a solid figure meet

volume: the number of cubic units needed to fill a solid figure (the formula for the volume of rectangular prisms is length × width × height also written as V = l × w × h or V = lwh)

OAS Mathematics Glossary

W

weight: how heavy an object is, such as ounce (oz), pound (lb), and ton (T)
whole number: positive numbers, including zero, without any decimal or fractional parts. (ex: 0, 1,2,3,4,5, ….)
whole number exponents: the numbers 0, 1, 2, 3…that indicate how many times the base is used as a factor, e.g., in $4^3 = 4 \times 4 \times 4 = 64$, the exponent 3, indicating that 4 is repeated as a factor three times
wide division: a strategy to use to solve division problems, instead of long division
width: breadth/distance across from side to side
withdrawal: money taken out of a bank or money removed from a saving account or a checking account
word form: a number written out in words to represent the value of the digits
word problem: a math problem presented as a scenario in text form with a variety of number sentences

X

x-axis: the horizontal number line of a coordinate plane used to show horizontal distance
x-coordinate: the first number in an ordered pair, it shows the distance a point is along the horizontal axis
x-intercept: where the line crosses the x-axis, $y = 0$, when in standard form it is C/A

Y

y-axis: the vertical number line of a coordinate plane used to show vertical distance
y-coordinate: the second number in an ordered pair, it shows the distance a point is along the vertical axis
y-intercept: where the line crosses the y-axis, $x = 0$, when in standard form it is C/B, when in slope-intercept form it is b
yard: 1 yard is equivalent to 3 feet or 36 inches

Z

zero: the numeral 0, used as a place holder (nothing, none, nil, naught)

Alpha Plus has developed successful methods and curricula that have been improving student achievement since 1992.
Written by Oklahoma teachers for Oklahoma teachers, *Success with OAS* is a vital part of the Alpha Plus "Way to an A."
- **Jan Barrick**
Chief Executive Officer
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