

5th
Grade



Pocket PALS

Priority Assessed Learning Standards

Mathematics & Reading

2009-2010



www.ksde.org
September 2009



Kansas State Board of Education

120 S.E. 10th Avenue • Topeka, Kansas 66612-1182

Education Priorities of the Kansas State Board of Education

Ensure that all students meet or exceed high academic standards and are prepared for their next steps (e.g., the world of work and/or post secondary education). To accomplish the mission of the Kansas State Board of Education, the Board has identified four goals. They are as follows:

- Redesign the delivery system to meet our students' changing needs.
- Provide an effective educator in every classroom.
- Ensure a visionary and effective leader in every school.
- Improve collaboration with families and communities, constituent groups and policy partners.

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Adopted 5/2009



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As the Kansas Commissioner of Education, I am committed to the Kansas State Board of Education's mission "to ensure that all students meet or exceed high academic standards and are prepared for their next steps, e.g., the world of work and/or postsecondary education."



To that end, the Kansas Priority Assessed Learning Standards (PALS) booklet is to give you—as educators—a quick reference to the 2009-10 assessed standards in reading and mathematics. Please know that the standards, benchmarks and indicators included in this document are just a small part of what you teach. The complete list of standards for reading, mathematics, writing, science, and history/government as well as the non-assessed models standards (communication, dance and creative movement, driver education, environmental education, health education, library media and technology, music, physical education, school counseling, theatre, visual arts, and world languages) can be accessed at: <http://www.ksde.org/Default.aspx?tabid=1678>.

It is imperative that we focus on these essential skills, which is why we created "Pocket PALS." You are the most valuable asset of a school and your relentless and effective teaching of each and every student ensures that all children in Kansas will and do succeed. I am hopeful that "Pocket PALS" will assist you in the development of well-planned, thoughtful, research-based methods of instruction for your classes. It is important to build on what students already know and can do as you continue to expand student knowledge and skill mastery in all curricular areas.

What an awesome responsibility you have as educators! I hope this tool will assist you as you prepare your students for the future. There has never been a more important time to focus on the students of tomorrow, than today.

A handwritten signature in cursive script, appearing to read "Alexa Posny".

Dr. Alexa Posny
Kansas Commissioner of Education

Mathematics Overview

Mission Statement

The mission of Kansas mathematics education is for all Kansas students to learn mathematical content and skills that are used to solve a variety of problems.

Vision Statement

The vision of mathematics education in Kansas is to work toward the following:

- Kansas mathematics education will be recognized as one of the premier programs in the United States.
- Kansas mathematics education will be equally effective for all students, irrespective of gender, race, or socioeconomic background.
- Kansas families will broadly recognize the importance of and be encouraged to participate actively in their child(ren)'s mathematics learning.
- Technology will be a fundamental part of mathematics teaching and learning.

The Purpose of this Document*

The standards, benchmarks, and indicators in this document¹ have been created to assist Kansas educators in developing local curricula and assessments, as well as to serve as the basis for the development of the state assessments in mathematics. The committee² strove to recommend high, yet reasonable expectations for all students. High, yet reasonable expectations for all students are components of fairness in education. All students include: those who choose to attend college, those who choose technical preparation, those who will enter the workforce, those from various socioeconomic backgrounds, those who have been identified as gifted in the area of mathematics, those who have been identified with learning disabilities, those who have previously been successful with mathematics, and those who have struggled with mathematics sometime in the past.

Students may need additional support both within and outside the regular classroom to meet those expectations. Teachers should be given the professional development and

* From the Introduction to the Kansas Curricular Standards for Mathematics, July 2003

¹ Kansas Curricular Standards for Mathematics, July 2003

² Refers to the Kansas Curricular Standards for Mathematics Committee, Kansas Curricular Standards for Mathematics, July 2003

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resources necessary to enable them to help all students strive to meet or exceed these expectations. This may seem a daunting task, but the alternative is not acceptable.

(Source: Kansas Curricular Standards for Mathematics, July 2003)

Math Standards Key

M.5.1.1.K1 = Math Grade 5, Standard 1, Benchmark 1, Knowledge indicator 1

N = Non-calculator portion of the assessment.

(\$) = Correlated with Personal Finance standards.

(2.4.K1a-b) = Indicator numbers in parentheses cross reference an indicator that can be used to model the concept referenced or, for a “model” indicator, reference indicators that can be explained using the model indicator.

Mathematics Standards & Benchmarks

Standard 1: Number and Computation – The student uses numerical and computational concepts and procedures in a variety of situations.

Benchmark 1: Number Sense – The student demonstrates number sense for integers, fractions, decimals, and money in a variety of situations.

M.5.1.1.K1a-c

Knows, explains, and uses equivalent representations for **(\$)**:

- Whole numbers from 0 through 1,000,000 (2.4.K1a-b);
- Fractions greater than or equal to zero (including mixed numbers) (2.4.K1c);
- Decimals greater than or equal to zero through hundredths place and when used as monetary amounts (2.4.K1c).

Benchmark 3: Estimation – The student uses computational estimation with whole numbers, fractions, decimals, and money in a variety of situations.

M.5.1.3.K2

Uses various estimation strategies to estimate whole number quantities from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero through hundredths place; and monetary amounts to \$10,000 and explains how various strategies are used (2.4.K1a-c) **(\$)**.

M.5.1.3.A4

Determines if a real-world problem calls for an exact or approximate answer using whole numbers from 0 through 100,000 and performs the appropriate computation using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.A1a) **(\$)**.

Benchmark 4: Computation – The student models, performs, and explains computation with whole numbers, fractions including mixed numbers, and decimals including the use of concrete objects in a variety of situations.

M.5.1.4.K4

N Identifies, explains, and finds the greatest common factor and least common multiple of two or more whole numbers through the basic multiplication facts from 1×1 through 12×12 (2.4.K1d).

M.5.1.4.A1a-f

N Solves one- and two-step real-world problems using these computational procedures **(S)** (For the purpose of assessment, two-step problems can include any combination of a, b, c, d, e, or f):

- a. Adds and subtracts whole numbers from 0 through 100,000 (2.4.A1a-b); e.g., Lee buys a bike for \$139, a helmet for \$29 and a reflector for \$6. How much of his \$200 check from his grandparents will he have left?
- b. Multiplies through a four-digit whole number by a two-digit whole number (2.4.A1a-b), e.g., at the amusement park, Monday's attendance was 4,414 people. Tuesday's attendance was 3,042 people. If the cost per person is \$23, how much money was collected on those days?
- c. Multiplies monetary amounts up to \$1,000 by a one- or two-digit whole number (2.4.A1c), e.g., what is the cost of 4 items each priced at \$3.49?
- d. Divides whole numbers through a 2-digit divisor and a 4-digit dividend with the remainder as a whole number or a fraction (2.4.A1a-c);
- e. Adds and subtracts decimals from thousands place through hundredths place when used as monetary amounts (2.4.A1a-c) (The set of decimal numbers includes whole numbers.), e.g., at the track meet, Peter ran the 100 meter dash in 12.3 seconds. Tanner ran the same race in 12.19 seconds. How much faster was Tanner?
- f. Multiplies and divides by 10; 100; and 1,000 and single digit multiples of each (10, 20, 30, . . . ; 100, 200, 300, . . . ; 1,000; 2,000; 3,000; . . .) (2.4.A1a-b), e.g., Matti has 1,590 stamps to place in her stamp album. 30 stamps fit on a page. What is the minimum number of pages she needs in her album?



Standard 2: Algebra – The student uses algebraic concepts and procedures in a variety of situations.

Benchmark 2: Variables, Equations, and Inequalities – The student uses variables, symbols, whole numbers, and algebraic expressions in one variable to solve linear equations in a variety of situations.

M.5.2.2.K1

Explains and uses variables and symbols to represent unknown whole number quantities from 0 through 1,000 and variable relationships (2.4.K1a).

M.5.2.2.K2

N Solves one-step linear equations with one variable and a whole number solution using addition and subtraction with whole numbers from 0 through 100 and multiplication with the basic facts (2.4.K1a,e) (**\$**), e.g., $3y = 12$, $45 = 17 + q$, or $r - 42 = 36$.

Benchmark 3: Functions – The student recognizes, describes, and examines whole number relationships in a variety of situations.

M.5.2.3.K4

Uses a function table (input/output machine, T-table) to identify, plot, and label whole number ordered pairs in the first quadrant of a coordinate plane (2.4.K1a,f)



Standard 3: Geometry – The student uses geometric concepts and procedures in a variety of situations.

Benchmark 1: Geometric Figures and Their Properties – The student recognizes geometric shapes and compares their properties in a variety of situations.

M.5.3.1.K3

Recognizes and describes the solids (cubes, rectangular prisms, cylinders, cones, spheres, triangular prisms, rectangular pyramids, triangular pyramids) using the terms faces, edges, and vertices (corners) (2.4.K1g).

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M.5.3.1.A1a

Solves real-world problems by applying the properties of (2.4.A1g): plane figures (circles, squares, rectangles, triangles, ellipses, rhombi, parallelograms, hexagons, pentagons) and the line(s) of symmetry; e.g., twins are having a birthday party. The rectangular birthday cake is to be cut into two pieces of equal size and with the same shape. How would the cake be cut? Would the cut be a line of symmetry? How would you know?

Benchmark 2: Measurement and Estimation – The student estimates, measures, and uses measurement formulas in a variety of situations.

M.5.3.2.K4a

Converts (2.4.K1a): within the customary system: inches and feet, feet and yards, inches and yards, cups and pints, pints and quarts, quarts and gallons, pounds and ounces.

M.5.3.2.A1a,c,f,g,h

Solves real-world problems by applying appropriate measurements and measurement formulas (**\$**):

- a. Length to the nearest eighth of an inch or to the nearest centimeter (2.4.A1a), e.g., in science, we are studying butterflies. What is the wingspan of each of the butterflies studied to the nearest eighth of an inch?
- c. Weight to the nearest whole unit (pounds, grams, nonstandard units) (2.4.A1a), e.g., if you bought 200 bricks (each one weighed 5 pounds), how much would the whole load of bricks weigh?
- f. Months in a year and minutes in an hour (2.4.A1a), e.g., it took Susan 180 minutes to complete her homework assignment. How many hours did she spend doing homework?
- g. Perimeter of squares, rectangles, and triangles (2.4.A1g), e.g., Mark wants to put up a fence in his rectangle-shaped back yard. If his yard measures 18 feet by 36 feet, how many feet of fence will he need to go around his yard?
- h. Area of squares and rectangles (2.4.A1g), e.g., a farmer's square-shaped field is 35 feet on each side. How many square feet does he have to plow?

Benchmark 3: Transformational Geometry – The student recognizes and performs transformations on geometric shapes including the use of concrete objects in a variety of situations.

M.5.3.3.K3

Recognizes three-dimensional figures (rectangular prisms, cylinders, cones, spheres, triangular prisms, rectangular pyramids) from various perspectives (top, bottom, side, corners) (2.4.K1g).



Standard 4: Data – The student uses concepts and procedures of data analysis in a variety of situations.

Benchmark 2: Statistics – The student collects, organizes displays, explains, and interprets numerical (rational numbers) and non-numerical data sets in a variety of situations with a special emphasis on measures of central tendency.

M.5.4.2.A1a-h

Interprets and uses data to make reasonable inferences, predictions, and decisions, and to develop convincing arguments from these data displays (2.4.A1k) (**\$**):

- a. Graphs using concrete materials,
- b. Pictographs,
- c. Frequency tables,
- d. Bar and line graphs,
- e. Venn diagrams and other pictorial displays,
- f. Line plots,
- g. Charts and tables,
- h. Circle graphs.

Overview for Reading

Mission Statement:

Kansas reading education is for all Kansas students to be given an equal opportunity to become competent and strategic readers.

Purpose

The reading and literature standards, benchmarks, and indicators for the Kansas Curricular Standards for Communication Arts (1999) were revised in 2003. The Kansas Curricular Standards for Reading (2003) will assist Kansas teachers in planning local curricula and assessment for reading, and literature, and will serve as the basis for the development of state assessments in reading. However, the Kansas Curricular Standards for Reading (2003) is not intended to be a state-mandated curriculum. Local curricula should further refine and shape the way that students demonstrate their development in the communication arts. Kansas Curricular Standards for Reading (2003) was developed with an understanding that **all** students will be given an equal opportunity to become competent and strategic readers.

Following are the reading indicators selected for assessment. The full document can be found on the Kansas State Department of Education's website on the Reading Standards webpage at www.ksde.org/Default.aspx?tabid=142.

Reading Standards Key

R.5.1.1.1 = Reading Grade 5, Standard 1, Benchmark 1, Indicator 1

Reading Standards & Benchmarks

Standard 1: Reading: The student reads and comprehends text across the curriculum.

Benchmark 3: The student expands vocabulary.

R.5.1.3.1

Determines the meaning of words or phrases by using context clues (e.g., definitions, restatements, examples, descriptions) from sentences or paragraphs.

Instructional Example:

Read the passage and delete certain words. Read the passage with the blanks and ask the student to be thinking about which word would make sense in the sentences.

R.5.1.3.4

Determines meaning of words through knowledge of word structure (e.g., root words, prefixes, and suffixes).

Instructional Example:

Read the passage and delete certain words. Read the passage with the blanks and ask the student to be thinking about which word would make sense in the sentences.

Benchmark 4: The student comprehends a variety of texts (narrative, expository, technical, and persuasive).

R.5.1.4.2

Understands the purpose of text features (e.g., graphs/charts and maps, table of contents, pictures/illustrations, boldface type, italics, glossary, index, headings, subheadings, and captions) and uses such features to locate information in and to gain meaning from appropriate-level texts.

Instructional Example:

Create a text scavenger hunt activity focusing on text features and their function within the text.

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R.5.1.4.5

Uses information from the text to make inferences and draw conclusions.

Instructional Example:

Have the student use vocabulary/key words from text to make predictions and draw conclusions from the text.

R.5.1.4.7

Compares and contrasts varying aspects (e.g., topics, characters' traits, themes, problem-solution, and cause-effect relationships) in one or more appropriate-level texts.

Instructional Example:

As the student reads, he/she puts a sticky note with a frowning face when he/she identifies a problem and puts a sticky note with a smiley face when he/she identifies a solution within the text. A sticky note with a baseball bat identifies a cause and one with a baseball identifies an effect.

R.5.1.4.8

Links causes and effects in appropriate-level narrative, expository, and technical texts, and identifies signal words related to cause-effect relationships.

Instructional Example:

Model for and then direct the student to highlight the cause in one color and the effect in another color on a portion of copied text.

R.5.1.4.9

Retells main ideas or events as well as supporting details in appropriate-level narrative, expository, technical, and persuasive texts.

Instructional Example:

Model for and use an outline to retell a paragraph or section of a story or article. The student shows understanding by outlining to retell a different paragraph or section of the same story or article.

R.5.1.4.10

Identifies the topic, main idea(s), supporting details, and theme(s) in appropriate-level texts.

Instructional Example:

Have the student generate a list of 5 movies. Then, student completes the statement, _____ (movie title) is a story about _____. The student may need to work from a list of story themes (e.g., courage, equality, revenge, desire, dreams, imagination, suffering, family, loneliness, fears, love) to complete the activity.

R.5.1.4.11

Identifies the author's purpose (e.g., to persuade, to entertain, to inform).

Instructional Example:

Help the student create 3 charts (a separate chart for persuade, entertain, and inform). Each chart has one column labeled "If the Author Uses . . .". The chart is filled in as different texts are read. For example, the "persuade" chart might record, "If the author uses strong language and an arguing tone, the purpose would be to persuade." Additional characteristics are added as other texts are read.

R.5.1.4.15

Distinguishes between fact and opinion and recognizes propaganda (e.g., advertising, media) in various types of appropriate-level texts.

Instructional Example:

Use advertising (commercials, magazine, newspaper ads) to help clarify for the student the author's use of propaganda as a sales technique.



Standard 2: Literature: The student responds to a variety of text.

Benchmark 1: The student uses literary concepts to interpret and respond to text.

R.5.2.1.1

Identifies and describes characters' physical traits, personality traits, and feelings, and explains reasons for characters' actions and the consequences of those actions.

Instructional Example:

The student role plays a character from a story. The roll playing should reveal the character's physical traits, personality traits, feelings about self and express the reasons for those actions during the story.

R.5.2.1.2

Identifies and describes the setting (e.g., environment, time of day or year, historical period, situation, place) and explains the importance of the setting to the story or literary text.

Instructional Example:

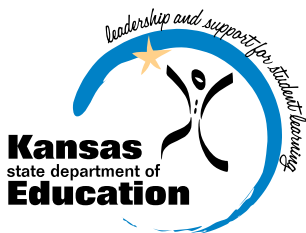
Encourage the student to highlight or underline the vocabulary that implies the environment, time of day/year, historical period, culture, situation, or place.

R.5.2.1.3

Identifies and describes the major conflict in a story and major events related to the conflict (e.g., problem or conflict, climax, resolution).

Instructional Example:

Model the use of sticky notes as a strategy to help student label turning moments in a text. Select a story and model for the student how to move through the text identifying and marking with a sticky note the problem or conflict, the climax, or the resolution in the text.



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