

KINDERGARTEN STANDARDS AND BENCHMARKS

September 2005

MATHEMATICS

Number and Operations

Standard 1: Understand and apply concepts of number and operations

Power Benchmark 1: Understand the properties of numbers and number systems

- a. Count with understanding and recognize “how many” in sets of objects.
- b. Use multiple models to develop understandings of place value and the base-ten number system.
- c. Develop understanding of the relative position and magnitude of whole numbers and of ordinal and cardinal numbers and their connections.
- d. Develop a sense of whole numbers and represent and use them in flexible ways, including relating, composing and decomposing numbers.
- e. Connect number words and numerals to the quantities they represent.
- f. Understand and represent commonly used fractions.

Power Benchmark 2: Understand the properties of operations

- a. Understand various meanings of addition and subtraction of whole numbers and the relationship between the two operations.
- b. Understand the effects of adding and subtracting whole numbers.
- c. Understand situations that require multiplication and division (equal groups, equal sharing).

Power Benchmark 3: Compute fluently and make reasonable estimates

- a. Develop and use strategies for whole number computations with a focus on addition and subtraction.
- b. Develop fluency with basic number combinations for addition and subtraction.
- c. Use a variety of strategies and tools to compute, including objects, mental computation, estimation, paper and pencil and calculators to solve problems.

Algebra

Standard 2: Understand and apply concepts of algebra and functions

Power Benchmark 1: Understand patterns, relations and functions

- a. Sort, classify, and order objects by more than one attribute.
- b. Recognize, describe, and extend patterns and translate from one representation to another.
- c. Analyze how both repeating and growing patterns are generated.

Power Benchmark 2: Use symbols to represent and analyze mathematical situations and structures

- a. Illustrate general principles and properties of operations using specific numbers (commutative).
- b. Use concrete, pictorial, and verbal representations to develop an understanding of invented and conventional symbolic notations.

Power Benchmark 3: Use mathematical models to represent and understand quantitative relationships

- a. Model situations that involve the addition and subtraction of whole numbers, using objects, pictures, and symbols.

Power Benchmark 4: Analyze change in a variety of situations

- a. Describe qualitative change, such as a student’s growing taller.
- b. Describe quantitative change, such as a student’s growing two inches in one year.

Geometry

Standard 3: Understand and apply concepts of geometry

Power Benchmark 1: Analyze characteristics and properties of two- and three-dimensional geometric shapes

- a. Recognize, name, build, draw, compare, and sort two- and three-dimensional shapes.
- b. Describe attributes and parts of two- and three-dimensional shapes.
- c. Investigate and predict the results of putting together and taking apart two- and three-dimensional shapes.

Power Benchmark 2: Use coordinate geometry & other representational systems to describe spatial relationships

- a. Describe, name, interpret, and apply ideas about relative positions in space.
- b. Describe, name, interpret, and apply ideas about direction and distance in navigating space.
- c. Find and name locations with simple relationships such as “near to” and in coordinate systems such as maps.

Power Benchmark 3: Use transformations and symmetry to analyze mathematical situations

- a. Recognize and apply slides, flips, and turns.
- b. Recognize and create shapes that have symmetry.

Power Benchmark 4: Use visualization, spatial reasoning, and geometric modeling to solve problems

- a. Create mental images of geometric shapes using spatial memory and spatial visualization.
- b. Recognize and represent shapes from different perspectives.
- c. Relate ideas in geometry to ideas in number and measurement.
- d. Recognize geometric shapes and structures in the environment and specify their location.

Measurement

Standard 4: Understand and apply concepts of measurement

Power Benchmark 1: Understand measurable attributes and processes of measurement

- a. Recognize the attributes of length, volume, weight, area, and time.
- b. Compare and order objects according to their measurable attributes.
- c. Understand how to measure using nonstandard and standard units.
- d. Select an appropriate unit and tool for the attribute being measured.

Power Benchmark 2: Apply appropriate techniques, tools and formulas to determine measurements

- a. Measure with multiple copies of units of the same size.
- b. Use repetition of a single unit to measure something larger than the unit.
- c. Use tools to measure.
- d. Develop common referents for measures to make comparisons and estimates.

Data Analysis & Probability

Standard 5: Understand and apply concepts of data analysis and probability

Power Benchmark 1: Collect, organize, and display data to answer questions

- a. Gather data to answer questions.
- b. Sort and classify objects according to their attributes and organize data about the objects.
- c. Represent data using concrete objects, pictures and graphs.

Power Benchmark 2: Use statistical methods to analyze data

- a. Describe parts of the data and the set of data as a whole to determine what the data show.

Power Benchmark 3: Read and interpret data

- a. Discuss events related to students’ experiences as likely or unlikely.

Power Benchmark 4: Use basic probability concepts

- a. Identify events that are more likely to occur than others.

SCIENCE

Power Standard 1: Understands and applies principles of scientific inquiry

Concepts: Scientific Reasoning, Conducting Scientific Investigations, Safety

- a. Uses the scientific method to gather, analyze, and interpret data.
- b. Uses appropriate tools for scientific investigations.
- c. Demonstrates safe handling procedures.

Power Standard 2: Understands and applies the basic concepts of life science

Concepts: Characteristics, Structure, Function, Basic Needs

- a. All things are living and non-living.
- b. All living things have basic needs.
- c. Demonstrates an understanding of external and internal parts of the human body.

Power Standard 3: Understands and applies the basic concepts of life/Earth

Concepts: Characteristics, Structure, Function, Basic Needs

- a. Trees are living, growing organisms.
- b. Trees can be described by observing their physical characteristics.
- c. Trees change through the seasons.

Power Standard 4: Understands and applies the basic concepts of physical science

Concepts: Properties, Motion, Position, Balance, Structure, Stability, Change

- a. Earth materials (water) have properties that can be changed.
- b. Properties of objects cause them to react differently in water.
- c. Earth materials (sand) have properties that can be changed.
- d. Structures are improved through technological design.
- e. Wood can be described by observing its physical properties.
- f. Wood has properties that can be changed.

LANGUAGE ARTS

Standard: Students will be able to apply reading, writing, speaking, and listening skills to communicate effectively.

Reading

Power Standard 1: Students will be able to read, analyze, and understand a variety of literary and informational texts for varied purposes.

Power Benchmark 1: Demonstrates accuracy and fluency when reading grade appropriate text

- a. Reads by sight a minimum of 20 high frequency words.
- b. Reads grade appropriate books.
- c. Understands the basic concepts of print.

Power Benchmark 2: Uses a variety of comprehension processes

- a. Retells stories or parts of stories (orally and through pictures).
- b. Uses pictures in text to talk about the content.
- c. Uses self-monitoring and self-correcting strategies.
- d. Responds to stories in a variety of ways (oral, written, artistic) to show comprehension.
- e. Makes and supports predictions.

Power Benchmark 3: Demonstrates the ability to learn new vocabulary to increase comprehension of texts

- a. Uses a variety of strategies to gain meaning from new words in texts.

Power Benchmark 4: Uses the print-sound code when reading grade appropriate text

- a. Recognizes sounds in words when listening and knows how to give the sounds (phonological awareness).
- b. Knows the names of the letters of the alphabet and can identify them by name and context (letter recognition).
- c. Knows the correspondence between phonemes (sounds) and graphemes (letters) that represent these sounds (phonics).
- d. Converts written words to spoken words (reads words).

Writing

Power Standard 1: Students will be able to use the writing process and apply a working knowledge of English language to write for a variety of purposes.

Power Benchmark 1: Uses the writing process

- a. Uses a variety of methods to communicate and make meaning (drawings, letter strings, scribbles, letter approximations and other graphic representations).

Power Benchmark 2: Varies writing according to purpose

- a. Uses letters and phonetically spelled words to convey meaning in writing.
- b. Rereads own writing.

Power Benchmark 3: Applies language conventions in writing

- a. Uses conventions of print.
- b. Uses capitalization and punctuation.

Communication

Power Standard: Students will be able to use speaking, writing, listening strategies and technological tools to support self-directed learning, and to share/receive information to work with diverse groups in a variety of situations.

Power Benchmark 1: Communicates effectively using speaking, listening, and technology skills

- a. Uses speaking skills to communicate effectively.
- b. Uses listening skills to communicate effectively.
- c. Uses technology skills to communicate effectively.

SOCIAL STUDIES

Standard: Students will be able to understand the development of civic responsibility and the influence of economics, geography, history, political science, and behavioral science on individuals and societies.

Power Benchmark - History: Understand the formation, development, and change of societies through time

- a. Understand the origins and significance of customs, holidays, celebrations, and landmarks in the family, community, state, nation, and world.
- b. Understand that the past influences the present.
- c. Explore regional folklore and cultural contributions that help form our heritage.
- d. Identify and describe family changes over time.

Power Benchmark - Political Science: Identify and analyze various governments, emphasizing the role of the citizen in a participatory government

- a. Describe rules that contribute to an effective family.
- b. Identify and practice rules and procedures that contribute to an effective classroom and school.
- c. Understand and practice good citizenship.
- d. Understand school, city, state, and national identities.
 - i. flags, symbols, anthems, pledges
 - ii. customs and celebrations mottoes

Power Benchmark - Economics: Understand the nature of world economics and their impact on the human condition

- a. Describe the family as an economic system.
- b. Explain and demonstrate the role of money in everyday life.
- c. Distinguish between needs and wants.
- d. Examine the distribution and use of natural resources at home and school.

Power Benchmark - Geography: Analyze the impact of location, place, human environmental interaction, movement, and region on the world's people

- a. Construct and use mental maps of the child's immediate environment (home, school) that demonstrate understanding of relative location, direction, size, and shape.
- b. Distinguish and use various representations of the earth, such as maps, globes, and photographs.
- c. Describe how people create places that reflect ideas, personality, culture, wants and needs as they design homes, playgrounds, and classrooms.

Power Benchmark - Behavioral Science: Understand the interactions of the individual and society and analyze human behavior and the range of its influences on human development to promote lifelong wellness

- a. Demonstrate and practice the Skills for Life to be able to work independently and cooperatively to accomplish goals.
- b. Demonstrate behavior appropriate to activity or location (school assemblies and functions, field trips, museums, memorials, parades, etc.).
- c. Describe the basic features of one's family.
- d. Explore factors that contribute to one's personal identity such as interests, capabilities, and perceptions.

PHYSICAL EDUCATION

Standard: Students will display the skills and practices of a physically active lifestyle.

Power Benchmark 1: Identify and model a health-enhancing level of physical fitness

- a. Participates regularly in vigorous physical activity.
- b. Identifies feelings that result from participation in physical activities.
- c. Is aware of his/her heart beating fast during physical activity.

Power Benchmark 2: Demonstrate competency in performance and apply knowledge of many movement concepts and forms

- a. Travels using a variety of locomotor skills in various directions.
- b. Identifies and manipulates a variety of objects.
- c. Maintains balance while bearing weight on a variety of body parts.
- d. Rolls sideways without hesitating.
- e. Demonstrate the ability to change directions in response to a signal.
- f. Travels in various forward and sideways directions using a variety of locomotor skills.

Power Benchmark 3: Demonstrate responsible, personal and social behavior in physical activity setting

- a. Knows and applies rules and procedures in the gym and on the playground.
- b. Interacts positively with students in class regardless of personal differences.
- c. Demonstrates cooperation with others in group tasks.

VISUAL ART

Standard: Students will understand, produce, and value visual art.

Power Benchmark 1: Process, analyze, and respond to sensory information through the language and skills unique to the visual arts

- a. Name and use the elements of art, emphasizing line, color, and shape.

Power Benchmark 2: Use media, techniques, and processes to communicate ideas, experiences, feelings, and stories

- a. Explore a variety of materials, techniques, and processes to express experiences, ideas, and feelings.
- b. Explore subject matter, visual symbols, and ideas to create works of art use art materials in a safe and responsible manner.

Power Benchmark 3: Understand the historical contributions and cultural dimensions of the visual arts

- a. Understand that art often tells the story of one's self and others.
- b. Understand that there are many reasons to make art.

Power Benchmark 4: Respond to, analyze, and make judgments about works in the visual arts

- a. Know that art is a form of expression and communication.
- b. Talk about own artworks and that of others.

MUSIC

Standard: Student will be able to understand, perform, and value music.

Power Benchmark 1: Singing alone and with others, a varied repertoire of music

- a. Use voices expressively to speak, chant, and sing.
- b. Sing a variety of simple songs in various keys, meters, songs, and styles.

Power Benchmark 2: Perform on instruments alone and with others, a varied repertoire of music

- a. Experiment with a variety of body percussion.
- b. Work to maintain a steady beat.

Power Benchmark 3: Improvising melodies, variations, and accompaniments

- a. Improvise short sound pieces and accompaniments.

Power Benchmark 4: Composes and arranges within specific guidelines

- a. Composition grows from improvisation. See Improvisation standards.

Power Benchmark 5: Reading and Notating Music

- a. Respond through movement to quarter notes, half notes, and eighth notes.
- b. Respond through movement to duple and triple meters (2's and 3's).

Power Benchmark 6: Listening to, analyzing, and describing music

- a. Respond through movement to various styles of music.
- b. Experience different vocal timbres.
- c. Experience different instrumental timbres.

Power Benchmark 7: Evaluating music and music performance

- a. Respond to music of various styles and genres.

Power Benchmark 8: Understands relationships between music, the other arts and disciplines outside the arts

- a. Identify similarities and differences between music and other disciplines.
- b. Identify ways in which music and other disciplines are interrelated
- c. Experience affective qualities of various arts.

Power Benchmark 9: Understanding music in relation to history and culture

- a. Experience aural examples of music from various cultures and historical periods.
- b. Demonstrate appropriate audience behavior for the context and style of music performed.