

GRADE 1 STANDARDS AND BENCHMARKS

September 2005

MATHEMATICS

Number & 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 co-ordinate 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

- 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: Needs, Environment, Change

- a. Plants have basic needs.
- b. Plants have a life cycle.
- c. Plants resemble their parents.

Power Standard 3: Understands and applies the basic concepts of earth science

Concepts: Change, Properties, Interaction, Structure

- a. Earth materials (rocks) have different properties.
- b. Earth materials can be used in a variety of constructions.
- c. Specific Earth materials (soil) are made of a combination of materials and are different from one location to another.

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

Concepts: Properties

- a. Objects are made of one or more materials and have many observable properties.
- b. A force or energy changes the position of an object.

LANGUAGE ARTS

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

Reading

Power Standard: 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 60 high frequency words.
- b. Uses self-monitoring and self-correcting strategies.
- c. Reads grade level materials accurately.
- d. Reads with fluency.

Power Benchmark 2: Uses a variety of comprehension processes

- a. Makes and supports predictions.
- b. Retells stories or parts of stories or books.
- c. Responds to text in a variety of ways (oral, written, artistic, or movement) to show comprehension.

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

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

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

- a. Recognizes sounds in words and knows how to segment and blend the phonemes into words.
- b. Knows the correspondences between phonemes (sounds) and graphemes (letters) that represent these sounds (phonics).
- c. Converts written words to spoken words (reads words).

Writing

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

Power Benchmark 1: Uses the writing process

- a. Uses the 5-step writing process: pre-write, draft, revise, edit, and publish.

Power Benchmark 2: Varies writing according to purpose

- a. Uses a variety of forms to write for different purposes.

Power Benchmark 3: Applies language conventions in writing

- a. Uses conventions of print.
- b. Spells grade-appropriate words correctly.
- c. Uses capitalization and punctuation.

Communication

Power Standard: Students will be able to use speaking, 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 skill 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. Identify and describe examples in which science and technology have changed the lives of people such as in homemaking, childcare, work, transportation, communications.
- b. Technology impacts work.
- c. Changes in work reflect changes in needs.

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

- a. Rules and procedures establish order.
- b. People cooperate with and depend on one another.
- c. Community depends upon people working together; interdependence exists among workers.

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

- a. People do different kinds of work in the community.
- b. Location and resources determine the kinds of work people do.

Power Benchmark – Economics: Understand the nature of world economies and their impact on the human condition

- a. Everyone has work to do.
- b. Explain and demonstrate the role of money in everyday life.
- c. Examine the distribution and use of natural resources in home, school, community, the nation, and the world.
- d. Work fulfills wants and needs.
- e. Describe how we depend upon workers with specialized jobs and the ways in which they contribute to the production and exchange of goods and services.

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. Demonstrates and practices the Skills for Life to be able to work independently and cooperatively to accomplish goals.
- b. Rights require responsibility

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. Uses a variety of locomotor skills.
- 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 and or stopping.
- e. Demonstrate the ability to change directions.
- 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 settings

- a. Knows and applies rules and procedures in the gymnasium, outside and physical education areas.
- b. Interacts positively with students in class regardless of personal differences.
- c. Demonstrates cooperation with others in group tasks.

VISUAL ARTS

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. Identify and use the elements of art in works of art, emphasizing line, color, shape, and texture
- b. Describe patterns in the environment and in works of art.

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

- a. Use a variety of media, techniques, and processes to express individual ideas, thoughts, and feelings.
- b. Identify and use subject matter, visual symbols, and ideas in works of art.
- c. Use art materials and tools in a safe and responsible manner.

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

- a. Recognize art as a visual record of individuals and cultures.
- b. Explore cultural heritage through art.

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

- a. Respond to works of art created in the classroom, emphasizing line, color, shape, and texture.
- b. Recognize that art communicates ideas.

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. Uses voice expressively to speak, chant, and sing.
- b. Sings a variety of simple songs in various keys, meters, genres, and styles alone with a group.
- c. Becomes increasingly aware of rhythm, pitch, and beat.

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

- a. Experiments with a variety of rhythm instruments and body percussion alone and with others.
- b. Plays simple rhythms on instruments.
- c. Works to maintain steady beat.

Power Benchmark 3: Improvising melodies, variations, and accompaniments

- a. Improvises rhythmic and melodic patterns in response to teacher's pattern using classroom instruments and /or body percussion.
- b. Improvises short sound pieces and accompaniments.

Power Benchmark 4: Composes and arranges within specified guidelines

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

Power Benchmark 5: Reading and Notating Music

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

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

- a. Responds through movement to various styles of music.
- b. Recognizes different vocal timbres.
- c. Recognizes different instrumental timbres.
- d. Aurally identifies phrases & sections of music that are same/different.

Power Benchmark 7: Evaluating music and music performances

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

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

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

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

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