

GRADE 2 STANDARDS AND BENCHMARKS

September 2005

MATHEMATICS

Numbers and Operations

Power Standard 1: Understand and apply concepts of number and operations

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. Understand and represent commonly used fractions connect number words and numerals to the quantities they represent.

Benchmark 2: Understands 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).

Benchmark 3: Computes fluently and makes 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 methods and tools to compute, including objects, mental computation, estimation, paper and pencil and calculators to solve problems.

Algebra

Power Standard 2: Understand and apply concepts of algebra and functions

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.

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.

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.

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

Power Standard 3: Understand and apply concepts of geometry

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 results of putting together and taking apart two- and three-dimensional shapes.

Benchmark 2: Use co-ordinate geometry and 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.

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.

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

Power Standard 4: Understand and apply concepts of measurement

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.

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

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

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.

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.

Benchmark 3: Read and interpret data

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

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. Understands how scientific knowledge changes with new evidence.
- b. Uses the scientific method to gather, analyze, and interpret data.
- c. Uses appropriate tools for scientific investigations.

- d. Demonstrates safe handling procedures.

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

Concepts: Interdependence, Habitat, Survival

- a. All living things depend on their habitat for survival.
- b. Living things interact within their environment.
- c. Living things have characteristics and body structures that allow them to survive in specific environments.

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

Concepts: Change, Properties

- a. Moving air is wind.
- b. Air interacts with other materials.
- c. Weather conditions change over time.

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

Concepts: Change, Constancy, Properties

- a. All solid objects have a definite shape.
- b. Liquids have no shape of their own but they do have a constant volume.
- c. Properties of solids and liquids can change when mixed.

LANGUAGE

Power 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 140 high frequency words.
- b. Uses self-monitoring and self-correcting strategies.
- c. Reads grade level materials accurately.
- d. Reads grade level materials accurately.

Power Benchmark 2: Uses a variety of comprehension processes

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

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

- 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. Knows the correspondences between phonemes (sounds) and graphemes (letters) that represent these sounds (phonics).
- b. Converts written word to spoken word (reads words).

Writing

Power Standard 1: 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, 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. Uses grammatical structure in written work.
- c. Spells grade-appropriate words correctly.

- d. 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 using speaking skills.
- b. Uses listening skill to communicate effectively.
- c. Uses technology skills to communicate effectively.

SOCIAL STUDIES

Standard 1: Students will be able to understand the development of civic responsibility and the influence of economics, geography, history, political science, and behavioral science on individual and societies.

Power Benchmark - History: Students will be able to understand the formation, development, and change of societies through time.

- a. Students will understand that community evolves over time.

Power Benchmark Political Science: Students will be able to identify and analyze various governments, emphasizing the role of the citizen in a participatory government.

- a. Students will understand that rules and procedures establish order.
- b. Students understand rights require responsibility.
- c. Students understand that individuals within communities share rights and responsibilities.

Power Benchmark – Economics: Students will be able to understand the nature of world economies and their impact on the human condition.

- a. Students will recognize government jobs in the community.
- b. Students understand why taxation is necessary.
- c. Students can use different production strategies to simulate production of goods and services.
- d. Students recognize the need to make informed decisions for a business community.
- e. Students will learn about an economy's circular flow of money.

Power Benchmark - Geography: Students will be able to analyze the impact of location, place, human environmental interaction, movement, and region on the world's people.

- a. Students will understand that a community is a group of people who live in the same locality.
- b. Students will understand the purpose of maps.

Power Benchmark - Behavioral Science: Students will be able to 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. Students will understand that demonstrating and practicing the Skills for Life will allow them to be able to work independently and cooperatively to accomplish goals.
- b. Students will understand how the arts express cultural heritage and our humanity:
 - literature
 - music, drama, dance
 - role of writers and artists
 - art
 - architecture

PHYSICAL EDUCATION

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

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

- a. Describe and use the elements of art, emphasizing line, color/value, shape/form, texture, and space.
- b. Identify and use the principles of design, emphasizing pattern, emphasis, and balance.

Power Benchmark 2: Students will use media, techniques, and processes to communicate ideas, experiences, feelings, and stories.

- a. Develop beginning skill in the use of different materials, techniques, and processes to communicate ideas, experiences and feelings.
- b. Describe 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: Students will understand the historical contributions and cultural dimensions of the visual arts.

- a. Recognize art as a visual record of families, friends, and neighborhood.
- b. Identify and discuss how art is used in events and celebrations in various cultures, past and present, including the use in one's own life.

Power Benchmark 4: Students will respond to, analyze, and make judgments about works in the visual arts.

- a. Understand that there are different responses to specific artworks.
- b. Reflect on own work and that of others, using the vocabulary of art.

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. Sings a variety of simple songs in various keys, meters, genres, and styles alone and with a group, becoming increasingly aware of rhythm and pitch.
- b. Sings expressively using dynamics, phrasing, and maintains a steady beat.
- c. Performs by responding to conductor/teacher cues.

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

- a. Uses instruments to perform rhythmically and harmonically.

Power Benchmark 3: Improvising melodies, variations and accompaniments

- a. Improvises short sound pieces using a variety of sound sources.

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. Uses a system (i.e., syllables, numbers, letters) to read simple pitch notation in the treble clef in major keys.

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

- a. Identifies simple music forms.
- b. Recognizes the sounds of a variety of instruments.
- c. Responds through purposeful movement to various styles of music.

Power Benchmark 7: Evaluating music and music performances

- a. Discusses the quality of various music performances.

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.