

CITYWIDE LEARNING STANDARDS

GRADE LEVEL SUMMARY:

English Language Arts, History & Social Studies,
Mathematics, Science & Technology

September, 2006

Grade 4

BPS CITYWIDE LEARNING STANDARDS: GRADE 4

INTRODUCTION



Goals

The Boston Public Schools Citywide Learning Standards are designed to produce *independent learners* who are encouraged to:

- Think, question, and communicate
- Gain and apply knowledge
- Work and contribute in meaningful, purposeful ways.

Students *think, question, and communicate* to make sense or meaning of their world and experiences.

Thinking includes being able to internalize new ideas and connect them to familiar concepts and prior knowledge.

Questioning includes the framing of thoughtful questions, and the pursuit of these questions until the student fully understands.

Communicating means putting learning into the language of speech or writing, and requires reflection in such forms as examination, clarification, analysis, and synthesis.

Students *gain and apply knowledge* to pursue ideas and experiences, and apply this new knowledge in real life contexts. This pursuit is interactive by nature. The more collaborative and experiential it is, the more powerful the learning.

Students' *work needs to be meaningful and purposeful*. The process and products of student work need to be valued contributions to the school and community, and the student. Embedded in powerful learning experiences are notions of persistence, self-discipline, hard work, effort, and pride in producing quality work.

Teaching and Learning in the Boston Public Schools

Learning is an active, constructive, creative, and often collaborative process that involves a variety of distinct cognitive strategies. Skillful learners use these strategies, largely unconsciously, to access content through text or other media, to make meaning of the content, to make connections with and apply the content in thoughtful and meaningful ways, and to retain the content for later use. In learning these strategies and coming to own them, students learn *how* to learn in addition to acquiring important knowledge. These strategies include the following:

Students will...

- Read, write, and think a lot about topics and ideas of importance to them.
- Set goals or purposes for their learning.
- Make personal connections between the content and other knowledge, experiences, text, or media.
- Ask questions as they read, listen, or view.
- Clarify the meaning of words or content they don't understand.
- Listen or watch for important elements, themes, or issues.
- Create sensory images.
- Make predictions, inferences and judgments.
- Get "in the shoes" of characters or participants.
- Create ongoing summaries or syntheses.

- Build on their understandings by sharing and discussing them with others.
- Assess their learning and make mid-course corrections.

Because we know this is how people learn, the system supports the *workshop* approach to teaching and learning. The workshop approach helps teachers organize their classrooms and instructional time to teach effective reading, writing, and learning strategies and to help students put them into practice. The most important goal of this approach is the development of *independent learners* who are equipped with the skills and knowledge they will need for a lifetime of learning.

The workshop approach derives from the insight that people learn best by doing and that teachers often need to provide students with more time to read, write, and use effective learning strategies to explore and understand the content they are studying. The approach also derives from the insight that students need to share in the ownership of the curriculum to increase their investment, engagement, and motivation. Students need to participate in the selection of “just right” books for independent and small group reading and writing activities, and they need to explore, read, and write about topics and ideas of importance to them (as well as the curriculum).

The workshop approach uses a mixture of whole-class, small group, partner, and one-on-one instruction that centers on conversations about content, strategies, and work routines. Each of these varied approaches to teaching and learning is essential to students’ development as independent readers, writers, and learners.

The Habits of Mind and Work

The following habits enable effective learning and are essential to students' success in school.

Developing these habits in students is the responsibility of every teacher, administrator, and other adult involved in the lives of our children.

- ***Curiosity and Critical Thinking:*** Students listen attentively, observe carefully, and ask thoughtful questions until they understand; they look for good evidence.
- ***Respect for Diversity:*** Students recognize and value racial, ethnic, cultural, age, gender, and individual commonalities and differences; they respect other people's points of view.
- ***Consideration and Compassion:*** Students treat themselves and others with care and respect; they build trusting relationships; they help, care for, and share with one another.
- ***Collaboration:*** Students work well with others, give and accept constructive criticism, try to be fair, and try to solve problems in a reasonable, peaceful manner.
- ***Self-Direction:*** Students check their own work, invite the critical response of others, and make appropriate adjustments.
- ***Perseverance:*** Students work hard until the job is done right, and are patient when the answers do not come quickly.
- ***Initiative:*** Students try new things, take reasonable risks, and reflect on their successes and mistakes.
- ***Courage:*** Students stand up for their rights and the rights of others in a positive manner that shows self- respect and respect for others; they resist harmful pressure.
- ***Responsibility:*** Students demonstrate personal responsibility and pursue important goals for themselves and their schools.

ENGLISH LANGUAGE ARTS: GRADE 4



Oral Presentation and Discussion

The student will be able to:

- Follow agreed-upon rules for large and small group discussions.
- Participate in small group discussions, book clubs, literature circles and class projects; carry-out assigned roles.
- Use listening skills to obtain information.
- Adapt language to persuade, to explain, or to seek information.
- Give organized formal and informal oral presentations using eye contact, proper pace, volume and clear enunciation of an informational nature.
- Express an opinion of a literary work or film in an organized way, with supporting details.
- Retell a story with a beginning, middle and end, including important details and story elements with subject related information and vocabulary.
- Use teacher developed criteria to prepare presentations.
- Explain multi-step directions on how to do something.

Language

The student will be able to:

- Identify the meaning of common prefixes, suffixes and root words.
- Identify common idioms and figurative phrases.
- Identify unknown words using their context.
- Use knowledge of word origins; synonyms, antonyms, homonyms; multiple meaning of words.
- Identify playful uses of language: puns, jokes and palindromes.
- Use the meaning of common Greek and Latin roots to determine the meaning of unfamiliar words.
- Determine meanings of words and alternate word choices using a dictionary or thesaurus.
- Differentiate between formal and informal language in advertisements read, seen and heard.
- Understand and use fundamental skills: sentence structure, punctuation, capitalization, grammar, and spelling for grade four as defined in the BPS Course Guides.

Reading and Literature

The student will be able to:

- Use comprehension strategies to access text: accessing prior knowledge, predicting, questioning, visualization, summarizing and structural analysis.
- Read grade appropriate narrative and expository text with comprehension, fluency, accuracy, intonation and appropriate timing and phrasing.
- Identify similarities and differences between characters or events in a literary work.
- Identify the different forms of literature such as poetry, prose, fiction, nonfiction and drama in reading and apply this knowledge as a strategy for comprehending text.
- Identify themes as lessons in folk tales, fables and Greek myths for children.
- When reading literary text, identify and show the relevance of foreshadowing clues, sensory details and figurative language, and the speaker of a poem or story.

- Locate facts that answer the reader’s questions, distinguish cause from effect, distinguish fact from opinion and summarize main ideas and supporting details when reading informational text
- Make judgments about setting, characters, events and support them with evidence from the text.
- Identify story and analyze plot, character and setting in the stories they read and write.
- Identify and use knowledge of common textual and graphic features and organizational structures in order to gain meaning from a variety of informational materials.
- Identify rhyme, rhythm, repetition, similes, visual and auditory images in poetry read aloud.
- Identify the adventures or exploits of a character type in literature.
- Identify phenomena explained in origin myths (*Prometheus/fire; Pandora/evils*).

Writing and Composition

The student will be able to:

- Take seed ideas from the writing notebook and bring through the drafting, revising and editing process to a published product.
- Use appropriate language for different audiences.
- Understand and use writers’ craft in their writing utilizing elements of style, including word choice, tone, voice and sentence variation.
- Write several related paragraphs on the same topic.
- Understand and use writers’ craft in their writing.
- Write legibly in cursive and use correct mechanics and grammatical conventions.
- Use knowledge of word study to monitor and check spelling.
- Spell common homophones correctly in their writing.
- Organize plot events in an order that leads to a climax in their writing.
- Write personal narratives in a way that makes sense.
- Write in different genre: personal narrative, nonfiction and poetry and a friendly letter, informal notes, thank-you notes, diary entries and journals.
- Write a response to a key question from a piece of literature.
- Write an explanation of a title or statement.
- Write a brief interpretation or explanation of a literary or informational text using evidence from the text as support.
- Write an account based on personal experience that has a clear focus and supporting detail.
- Use appropriate language for different audiences and purposes.
- Revise their writing; determine what could be added or deleted; improve the level of detail.
- Make up an open-ended question on a research topic.
- Evaluate his/her own research.

Media

The student will be able to:

- Create presentations using computer technology, posters and reports, using the internet and CD-ROM on informational topics from social studies and science.
- Use their understanding of television to distinguish between fact and fiction.
- Examine and explain advertising.
- View, understand, and discuss informational media productions.

Teachers should refer to the grade 4 English Language Arts Course Guide

for ideas and activities related to the standards.

HISTORY & SOCIAL STUDIES: GRADE 4

North American Geography; Ancient China



In grade 4, students study the geography and people of the United States today. Students learn geography by addressing standards that emphasize political and physical geography and embed five major concepts: location, place, human interaction with the environment, movement, and regions. In addition, they learn about the geography and people of contemporary Mexico and Canada. Teachers will also teach the standards on the geography and social characteristics of the nations in Central America and the Caribbean Islands. Students will also study China because it is the major, ancient civilization not studied in grade 6 and can be easily connected to the English language arts curriculum through its myths, legends, and folktales.

Note: The grade 5 MCAS will cover only the U.S. history, geography, economics, and civics standards, concepts, and skills of grades 4 and 5.

Grade 4 Concepts and Skills

Students will be able to.....

Apply concepts and skills learned in previous grades.

History and Geography

1. Use map and globe skills to determine absolute locations (latitude and longitude) of places studied. (G)
2. Interpret a map using information from its title, compass rose, scale, and legend. (G)
3. Observe and describe national historic sites and describe their function and significance. (H, C)

Civics and Government

4. Give examples of the major rights that immigrants have acquired as citizens of the United States (e.g., the right to vote, and freedom of religion, speech, assembly, and petition). (C)
5. Give examples of the different ways immigrants can become citizens of the United States. (C)

Economics

6. Define and give examples of natural resources in the United States. (E)
7. Give examples of limited and unlimited resources and explain how scarcity compels people and communities to make choices about goods and services, giving up some things to get other things. (E)
8. Give examples of how the interaction of buyers and sellers influences the prices of goods and services in markets. (E)

Grade 4 Learning Standards: Ancient China, c. 3000-200 BC/BCE

Building on knowledge from previous years, students will be able to.....

- 4.1 On a map of Asia, locate China, the Huang He (Yellow) River and Chang Jiang (Yangtze) Rivers, and the Himalayan Mountains. (G)
- 4.2 Describe the topography and climate of eastern Asia, including the importance of mountain ranges and deserts, and explain how geography influenced the growth of Chinese civilization. (G, E)
- 4.3 Describe the ideographic writing system used by the Chinese (characters, which are symbols for concepts/ideas) and how it differs from an alphabetic writing system. (H)
- 4.4 Describe important technologies of China such as bronze casting, silk manufacture, and gunpowder. (H, E)

- 4.5 Identify who Confucius was and describe his writings on good government, codes of proper conduct, and relationships between parent and child, friend and friend, husband and wife, and subject and ruler. (H, C)
- 4.6 Describe how the First Emperor unified China by subduing warring factions, seizing land, centralizing government, imposing strict rules, and creating with the use of slave labor large state building projects for irrigation, transportation, and defense (e.g., the Great Wall). (H, C, E)
- 4.7 After visiting a museum, listening to a museum educator in school, or conducting research in the library, describe an animal, person, building, or design depicted in an ancient Chinese work of art. (H, G)

Grade 4 Learning Standards: Geography

North America:

Anguilla (U.K.), Antigua and Barbuda, Aruba (Neth.), Bahamas, Barbados, Belize, Bermuda (U.K.), British Virgin Islands (U.K.), Canada, Cayman Islands (U.K.), Costa Rica, Cuba, Dominica, Dominican Republic, Greenland (Den.), Grenada, Guadeloupe (Fr.), Guatemala, Haiti, Honduras, Jamaica, Martinique (Fr.), Mexico, Montserrat (U.K.), Netherlands Antilles (Neth.), Nicaragua, Panama, Puerto Rico (U.S.), St. Kitts and Nevis, St. Lucia, St.-Pierre and Miquelon (Fr.), St. Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos Islands (U.K.), United States, Virgin Islands (U.S.)

Building on knowledge from previous years, students will be able to.....

Regions of the United States

- 4.8 On a map of the world, locate North America. On a map of North America, locate the United States, the Atlantic and Pacific Oceans, Gulf of Mexico, Mississippi and Rio Grande Rivers, the Great Lakes, Hudson Bay, and the Rocky and Appalachian Mountain ranges. (G)
- 4.9 On a map of North America, locate the current boundaries of the United States (including Alaska and Hawaii). Locate the New England, Middle Atlantic, Atlantic Coast/Appalachian, Southeast/Gulf, South Central, Great Lakes, Plains, Southwest Desert, and Pacific states and the Commonwealth of Puerto Rico. See Appendix H for a listing of states in each region. (G)
- 4.10 Identify the states, state capitals, and major cities in each region. (G)
- 4.11 Describe the climate, major physical features, and major natural resources in each region. (G)
- 4.12 Identify and describe unique features of the United States (e.g., the Everglades, the Grand Canyon, Mount Rushmore, the Redwood Forest, Yellowstone National Park, and Yosemite National Park). (G)
- 4.13 Identify major monuments and historical sites in and around Washington, D.C. (e.g., the Jefferson and Lincoln Memorials, the Smithsonian Museums, the Library of Congress, the White House, the Capitol, the Washington Monument, the National Archives, Arlington National Cemetery, the Vietnam Veterans Memorial, the Iwo Jima Memorial, and Mount Vernon). (G)
- 4.14 Identify the five different European countries (France, Spain, England, Russia, and the Netherlands) that influenced different regions of the present United States at the time the New World was being explored and describe how their influence can be traced to place names, architectural features, and language. (H, G)
- 4.15 Describe the diverse nature of the American people by identifying the distinctive contributions to American culture of:
- several indigenous peoples in different areas of the country (e.g., Navajo, Seminoles, Sioux, Hawaiians, and Inuits).
 - African Americans, including an explanation of their early concentration in the South because of slavery and the Great Migration to northern cities in the 20th century, and recent African immigrant groups (e.g., Ethiopian) and where they tended to settle in large numbers.

- c. major European immigrant groups who have come to America, locating their countries of origin and where they tended to settle in large numbers (e.g., English, Germans, Italians, Scots, Irish, Jews, Poles, and Scandinavians).
 - d. major Spanish-speaking (e.g., Cubans, Mexicans) and Asian (e.g., Chinese, Japanese, Korean, Vietnamese) immigrant groups who have come to America in the 19th and 20th centuries, locating their countries of origin and where they tended to settle in large numbers. (H, G)
- 4.16 Identify major immigrant groups that live in Massachusetts and where they now live in large numbers (e.g., English, Irish, Italians, French Canadians, Armenians, Greeks, Portuguese, Haitians, and Vietnamese). (H, G)

Canada

- 4.17 On a map of North America, locate Canada, its provinces, and major cities. (G)
- 4.18 Describe the climate, major physical characteristics, and major natural resources of Canada and explain their relationship to settlement, trade, and the Canadian economy. (G, E)
- 4.19 Describe the major ethnic and religious groups of modern Canada. (G, H, C, E)
- 4.20 Identify when Canada became an independent nation and explain how independence was achieved. (H, G)
- 4.21 Identify the location of at least two Native American tribes in Canada (e.g., Kwakiutl and Micmac) and the Inuit nation and describe their major social features. (H, G)
- 4.22 Identify the major language groups in Canada, their geographic location, and the relations among them. (H, G)

Mexico

- 4.23 On a map of North America, locate Mexico and its major cities. (G)
- 4.24 Describe the climate, major physical characteristics, and major natural resources of Mexico and explain their relationship to the Mexican economy. (G)
- 4.25 Identify the language, major religion, and peoples of Mexico. (H)
- 4.26 Identify when Mexico became an independent nation and describe how independence was achieved. (H, G)

Central America and the Caribbean Islands

- 4.27 On a map of North and South America, locate the Isthmus of Panama which divides North from South America. Use a map key to locate islands, countries, and major cities of Central America and the Caribbean Islands. (G, E)
- 4.28 Describe the climate and major natural resources of Central America and the Caribbean Islands and explain their relationship to the economy of those regions. (G, E)
- 4.29 Identify the different languages used in different countries in the Caribbean region today (e.g., Spanish in Cuba, French in Haiti, English in Barbados and Jamaica). (H)
- 4.30 Identify when the countries in the Caribbean and in Central America became independent nations and explain how independence was achieved. (H, G)

Discussion and Presentation

Students will...

- Use agreed upon rules to participate in and facilitate large and small group discussions.
- Organize and present their thoughts in a logical manner.
- Support their ideas with evidence or details; expect and request the same of others.
- Actively listen, respond to, and build on ideas generated during discussions.
- Use the information to inform or change their perspectives.

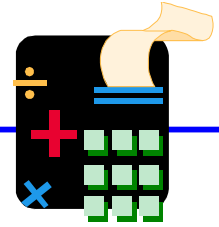
- Ask for clarification when others' responses are unclear.
- Summarize and evaluate what they have learned from the discussion.
- Evaluate the productivity of discussions using established criteria; make suggestions to improve the discussions.
- Give oral presentations, using established criteria to prepare, assess, and improve their presentations.

Composition

Students will...

- Write frequently in response to readings, lectures, and other presentations (e.g., summaries, questions, reactions, interpretations, connections, perspectives, predictions, "in the shoes" narratives and reflections, and other written or artistic responses to people and events.
- Maintain a system (e.g., geography notebooks) for collecting, referring to, and sharing their notes, thoughts, and writings, including formal writing products.
- Write occasional, brief research reports to extend their knowledge beyond classroom presentations; include a clear focus and supporting details.
- Write, share, assess, and revise frequent responses to MCAS-like, open response (key) questions posed by the teacher.

MATH – GRADE 4



Data Analysis, Statistics, and Probability

Students will be able to...

- Formulate questions, collect and organize data using observations, measurements, surveys, or experiments, and identify appropriate ways to display the data.
- Make quick sketches, including a line plot, of the data to use as working tools during analysis
- Describe the overall shape of the data, including clumps, gaps, range, and outliers.
- Summarize what is typical of the data.
- Choose and refines a research question.
- Define the way data will be collected.
- Record data accurately.
- Organize collected data.
- Write a description of data collected.
- Students match representations of a data set such as lists, tables, or graphs with the actual data set.
- Interpret different kinds of graphs.
- Students construct, draw conclusions, and make predictions from various representations of data sets, including tables, bar graphs, pictographs, line graphs, line plots, and tallies.
- Invent representations of data.
- Compare two sets of data using the shape of each set and what's typical in that set.
- Find the median in a set of data arranged in numerical order.
- Find the median in a set of data grouped by frequency.
- Use the median to compare two data sets of data.
- Write an interpretation of the findings from data collected.
- Predict the probability of outcomes of simple experiments.
- Describe events as likely or unlikely and discuss the degree of likelihood using words such as certain, likely, unlikely, equally likely, and impossible.

Geometry

Students will be able to...

- Describe, model, draw and compare and classify 2-D and 3-D shapes.
- Develop concepts and language needed to think about and communicate about spatial relationships in 3-D environments.
- Understand standard drawings of 3-D cube configurations.
- Describe geometric figures such as rectangles and squares in several ways.
- Describe and apply techniques such as reflections, rotations, and translations for determining if two shapes are congruent.
- Compare area of shape.
- Compare shapes that are congruent.
- Predict and validate the results of partitioning, folding, and combining 2-D and 3D shapes.
- Develop skill of translating 2-D pictures into 3-D structures
- Understand geometric perspective.

- Using ordered pairs of numbers and/or letters, graph, locate, identify points, and describe paths (first quadrant).
- Use positive and negative coordinates to name and locate points on grids.
- Calculate distances on a grid based on paths along grid lines.
- Identify and describe line symmetry in 2-D shapes.
- Use mirror and rotational symmetry to place rectangles on a grid and to design complex patterns of rectangles.

Measurement

Students will be able to...

- Demonstrate an understanding of such attributes as length, area, weight, and volume, and select the appropriate type of unit for measuring each attribute.
- Identify benchmarks for the measure of length, weight, volume, and time.
- Order items by measures of weight and by measures of liquid amount.
- Measure weight with a balance scale and weights.
- Develop meaning for the concepts of volume and density; distinguish between quantity and weight.
- Understand that equal fractions of a whole have the same area but are not necessarily congruent.
- Begin to relate cube configurations and the spatial relationships in 3-D objects to volume.
- Carry out simple unit conversions within a system of measurement.
- Measure weight using a pan balance.
- Identify time...compute elapsed time and using a calendar.
- Estimate and find area and perimeter of a rectangle, triangle, or irregular shape using diagrams, models, grids or by measuring.
- Develop strategies for estimating perimeters and areas of rectangles, triangles, or irregular shapes.
- Understand measurements are approximations; investigate how differences in units affect precision. Consider the degree of accuracy needed for different situations.
- Determine when precise measurement is required and when estimates are good enough.
- Identify and use appropriate metric and English units and tools to estimate, measure, and solve problems involving length, area.
- Choose and accurately use appropriate tools for measuring: weight, volume, capacity and time.
- Recognize which measurement units are U.S. standard and which are metric.
- Estimate familiar distances in miles and tenths of miles.
- Measure distance on maps using scales.

Number Sense and Operations

Students will be able to...

- Exhibit an understanding of the base ten number system.
- Add and subtract multiples of 10.
- Estimate how many hundreds are in a group of three-digit numbers.
- Recognize patterns that are useful for multiplying by multiples of 10 (for example: $2 \times 7 = 14$; $2 \times 70 = 140$; $20 \times 7 = 140$).
- Read, write, and locate in sequence numbers up to 10,000.

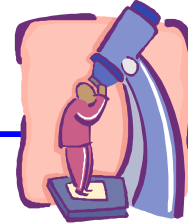
- Make sense of the magnitude of numbers up to 10,000.
- Identify and use important landmarks up to 1000 (25, 50,75,100,125,150,Etc.)
- Represent, order and compare numbers.
- Demonstrate an understanding of fractions as parts of wholes and locations on a number line.
- Understand that equal fractions of a whole have the same area but are not necessarily congruent.
- Understand and use fractions that have numerators larger than 1.
- Combine different fractions to make a whole.
- Order fractions using both numerical reasoning and the area model.
- Select, use and explain models to relate common fractions and mixed numbers, find equivalent fractions, and order fractions.
- Recognize parts to make equivalent wholes.
- Compare any fractions to the landmarks 0,1/2,1, and 2.
- Understand the relationships among halves, fourths, and eighths.
- Understand the relationships among thirds, sixths, and twelfths.
- Identify equivalent fractions.
- Have strategies to compare fractions.
- Identify and generate equivalent forms of common decimals and fractions less than one whole.
- Exhibit an understanding of the base ten number system by reading, naming, and writing decimals between 0 and 1 up to the hundredths.
- Recognize classes to which a number may belong, and identify the numbers in those classes. Use these in the solution of problems.
- Recognize a prime number as a number with only one pair of factors and one array.
- Recognize and accurately uses the terms multiple, factor, and prime number.
- Select, use, and explain the various meanings and models of multiplication and division of whole numbers. Understand and use the inverse relationship between the two operations.
- Select, use, and explain the commutative, associative, and identity properties of operations in whole number problem situations.
- Select and use appropriate operations (addition, subtraction, multiplication, and division) to solve problems, including those involving money.
- Know multiplication facts through 9 x 9 and related division facts.
- Demonstrate fluency of multiplication pairs (for example: either automatically knows the pairs or has one quick strategy for finding the answers).
- Add, subtract, multiply, and divide accurately and efficiently.
- Select and use a variety of strategies to estimate quantities, measures, and the results of whole number computations, and to judge the reasonableness of the answer.

Discussion, Presentation and Composition

Students will be able to...

- Use agreed upon rules to participate in large and small group discussions.
- Express ideas in an organized way.
- Explain their mathematical thinking in writing.
- Maintain a system for collecting, referring to, and sharing their work.

SCIENCE & TECHNOLOGY: GRADE 4



Topic: Animal Studies

Adaptations of Living Things

Students will be able to...

- Give examples of how inherited characteristics may change over time as adaptations to changes in the environment that enable organisms to survive, e.g., shape of beak or feet, placement of eyes on head, length of neck, shape of teeth, color.
- Give examples of how changes in the environment (drought, cold) have caused some plants and animals to die or move to new locations (migration).
- Describe how organisms meet some of their needs in an environment by using behaviors (patterns of activities) in response to information (stimuli) received from the environment. Recognize that some animal behaviors are instinctive (e.g., turtles burying their eggs).
- Recognize plant behaviors, such as the way seedlings' stems grow toward light and their roots grow downward in response to gravity. Recognize that many plants and animals can survive harsh environments because of seasonal behaviors,
- Give examples of how organisms can cause changes in their environment to ensure survival. Explain how some of these changes may affect the ecosystem.

Topic: Motion and Design

Forms of Energy

Students will be able to...

- Identify the basic forms of energy (light, sound, heat, electrical, and magnetic). Recognize that energy is the ability to cause motion or create change.
- Give examples of how energy can be transferred from one form to another

Topic: Electricity & Magnetism

Forms of Energy

Students will be able to...

- Identify the basic forms of energy (light, sound, heat, electrical, and magnetic). Recognize that energy is the ability to cause motion or create change.
- Give examples of how energy can be transferred from one form to another.

Electrical Energy

Students will be able to...

- Recognize that electricity in circuits requires a complete loop through which an electrical current can pass, and that electricity can produce light, heat, and sound.
- Identify and classify objects and materials that conduct electricity and objects and materials that are insulators of electricity.
- Explain how electromagnets can be made, and give examples of how they can be used.

Magnetic Energy

Students will be able to...

- Recognize that magnets have poles that repel and attract each other.
- Identify and classify objects and materials that a magnet will attract and objects and materials that a magnet will not attract.

Topic: Earth's Materials

Rocks and Their Properties

Students will be able to...

- Give a simple explanation of what a mineral is and some examples, e.g., quartz, mica.
- Identify the physical properties of minerals (hardness, color, luster, cleavage, and streak), and explain how minerals can be tested for these different physical properties.
- Identify the three categories of rocks (metamorphic, igneous, and sedimentary) based on how they are formed, and explain the natural and physical processes that create these rocks.

Soil

Students will be able to...

- Explain and give examples of the ways in which soil is formed (the weathering of rock by water and wind and from the decomposition of plant and animal remains).
- Recognize and discuss the different properties of soil, including color, texture (size of particles), the ability to retain water, and the ability to support the growth of plants.

Properties of Objects

Students will be able to...

- Differentiate between properties of objects (e.g., size, shape, weight) and properties of materials (e.g., color, texture, hardness).

Topic: Technology/Engineering

Machines and Tools

Students will be able to...

- Use appropriate materials, tools, and machines to extend our ability to solve problems.

Engineering Design

Students will be able to...

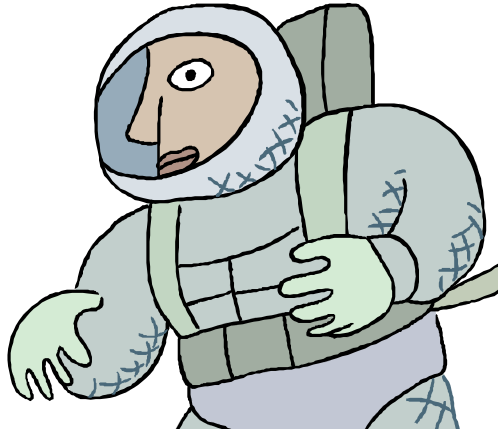
- Use the Engineering design process to solve a practical problem that reflects the needs for storage, shelter, or convenience.
- Describe different ways in which the problem can be represented.
- Compare natural systems with mechanical systems that are designed to serve similar purposes, e.g. a bird's wing as compared to an airplane's wing.

Discussion, Presentation and Composition

Students will be able to...

- Participate in formal and informal discussions in large and small groups, using agreed upon rules to conduct and facilitate them.
- Contribute knowledge to class discussions.
- Give formal and informal oral presentations using effective presentation skills.
- Express an idea in an organized way, with supporting details.
- Retell an observation with a beginning, middle and end, including important details.
- Use teacher developed criteria to prepare their presentations.
- Use listening skills to obtain information.
- Write frequently in response to readings, other presentations, and observations (e.g., summaries, questions, reactions, connections, predictions, reports).

- Maintain a system for collecting, referring to, and sharing their thoughts, observations, writings, illustrations, and other work.



PERFORMANCE STANDARDS: GRADE 4



All Subjects

Students are expected to earn a passing grade (levels 2-4, 60-100%, D- to A+) on the tests, products and assignments required by their teacher, including any grade-level assessments that may be developed and administered by each school.

Reading & Writing

1. Reading:

Citywide Assessments: Students are expected to meet minimum competency benchmarks on one of the following assessments.

- Scholastic Reading Inventory (lexile 600)
- Qualitative Reading Inventory (level 3.0)
- Gates-MacGinite (level 4.5)

Grade level proficiency benchmarks on each of these assessments are as follows:

- Scholastic Reading Inventory (lexile 750)
- Gates-MacGinite (level 5.0)

Students enrolled in the *Transition Bilingual Program* are expected to meet the following minimum competency benchmarks in English:

- Stage 2: SRI Level 14, Lexile 285
- Stage 3: SRI Level 14, Lexile 450
- Stage 4: SRI Level 14, Lexile 600

English/Native Language Arts: Students are expected to read and respond to a minimum of 20 books each year from multiple genres, including fiction and non-fiction. Students' responses should be collected in a Literature Response Journal. Students will select their books from the core literature list or from lists of books developed by teachers, in collaboration with their colleagues. The literature in these teacher-developed lists must meet the following criteria. The literature must be rigorous, explore diverse and relevant themes, represent a variety of perspectives (race, ethnicity, gender, class, and age), and include classical and contemporary literature. The lists must include books that represent the range of reading levels evident in students and they must vary from grade to grade

Teachers should select at least one or two books from their list that all students will read through shared reading, read alouds, guided reading, and/or book clubs/literature circles. The books will be chosen to: a) provide students with an opportunity to explore how a particular author uses language, structure, and other literary elements in a particular way to tell a story or inform the reader; b) engage all students in discussions about a single piece of literature or a particular theme; and c) develop and assess students' ability to respond to literature and use discussion strategies. Attention should be given to ensure the selections are rich in content and ideas and accessible to students with teacher and peer support.

2. Writing: *English/Native Language Arts*

- a. Students are expected to meet minimally acceptable standards (level 2-4 using BPS Task Descriptions, MCAS Scoring Guides, Six Traits Rubric, or comparable school-developed alternatives; levels 3-6 on MCAS ELA Composition Scoring Guide) on at least one independently produced *Personal Narrative* and one independent *Response to Literature* (Key Question) by the close of the school year.
- b. Students are expected to keep a writer's notebook where they have the opportunity to collect ideas each day, think about their writing and write about what they're thinking and reading. The

notebook will include a large volume of work. A minimum of 6-8 pieces of work from multiple genres will emerge from their notebook, be taken through the writing process (including a seed idea, initial drafts, revisions, edits, completion/publication) and be assessed using a rubric. At least two of these works will be responses to complete works of literature.

3. Performance on reading and writing assessments should be factored into students' grades.

Mathematics

Students are expected to earn a passing grade (levels 2-4) on:

- End-of-unit assessments from the *Investigations* curriculum
- Citywide, BPS mid- and end-of-year assessments in mathematics

Performance on these assessments should be factored into students' final grades.

Massachusetts Comprehensive Assessment System (MCAS)

Students are expected to earn a passing score (levels 2-4) on the *English Language Arts, ELA Composition* and *Mathematics* assessments administered in the spring. Performance on these assessments is not factored into a student's final grade.

