

LANGUAGE ARTS

Developing skillful readers and writers is one of the fundamental goals of our language arts program. Reading and writing are complementary skills which are taught through an integrated language arts program. Students are required to construct meaning from text, communicate through writing, listen effectively, and speak with clarity.

Reading is a dynamic process which encourages readers to apply their existing knowledge to text as they read. The major goal of our reading program is to develop students who use a variety of strategies in order to understand and interpret what is being read and to reflect and respond in a thoughtful manner.

Second grade is a time when most children work toward refining skills needed in the process of learning to read. Emphasis is placed on helping children see and understand how word patterns can help them decode unfamiliar words. As a foundation for sound/symbol learning, we teach a select number of high utility phonics generalizations through phonology as well as through the most commonly found “rimes” or “chunks.”

At the beginning of grade 2, many students have progressed through the developmental stages of emergent readers and early readers. Some students may be fluent or independent readers. Since not all children pass through these stages in lock step progression, our goal is to meet children where they are and to tailor or differentiate instruction to address their needs and continue their progress toward becoming independent readers. The expectation is that all students will master the second grade level English/language arts standards by June.

Second graders continue to learn the importance of setting a purpose before reading and the role that previewing a text, making predictions and asking questions play in helping them to focus their attention. They are expected to monitor their comprehension during reading and are given prompts and strategies for organizing information before, during and after reading. They respond in some way after reading through, discussing, drawing, writing, role playing, and engaging in tasks that provide opportunities for them to become better listeners, speakers, and writers.

Students read a variety of genres selected from literature collections, trade books, picture books, poetry and nonfiction. For instructional purposes the goal is always to match the level of the text to the needs of the child. Although children have many opportunities to interact with text through shared reading, paired reading, read alouds, and flexible groupings, it is the direct instruction provided through guided reading that children have on a daily basis which is key to their learning to read.

Writing is also a dynamic, interactive and constructive practice. Our instructional focus is to develop writers who can communicate with an intended audience, incorporating appropriate elements of composition and the conventions of language. In addition, most second graders will have an opportunity to use computer program which will allow them to publish their writing in a more formal/conventional manner.

The writing process begun in Kindergarten and first grade is continued in second grade. As is the case with reading, children are at different developmental stages along the writing continuum. An introduction to paragraph development is a part of their instruction. They write about what they know, may keep journals, record science observations, and write about math as well as other short and focused forms of prose. They are also responsible for conventional spellings of high frequency, priority words. Students produce writing samples twice a year, in the fall and spring. Samples are dated and placed in the students' cumulative writing files. Opportunities for children to link technology and writing are available at the second grade level with such programs as *Easy Book*. Children gain important computer skills through exposure to this software as well as the motivation to publish selected pieces of work.

Teachers at the second grade level assist the students with refining their manuscript handwriting skills. The Handwriting Without Tears program, first introduced in kindergarten, is taught. Correct size, good form, neatness, and good habits for letter formation, pencil grip, and posture are stressed.

MATHEMATICS

The major goal of the elementary mathematics curriculum is to develop students who are proficient in and empowered by the effective use of mathematics. This goal is consistent with the philosophy of the National Council of Teachers of Mathematics *Principles and Standards for School Mathematics* which supports the view of school mathematics as an experience that is “grounded in the belief that all students should learn important mathematical concepts and processes with understanding.”

The *Principles* describe particular features of high-quality mathematics education. The six principles for school mathematics address overarching themes:

- * Equity
- * Curriculum
- * Teaching
- * Learning
- * Assessment
- * Technology

The *Standards* describe the mathematical content and processes that students should learn. The Content Standards explicitly describe the content that students should learn. The Content Standards are:

- * Number and Operations
- * Algebra
- * Geometry
- * Measurement
- * Data Analysis
- * Probability

The Process Standards highlight ways of acquiring and using content knowledge. The Process Standards are:

- * Problem Solving
- * Reasoning and Proof
- * Communications
- * Representations

Our K-5 Mathematics Program is the Revised “Investigations in Number, Data, and Space” 2008 Program (Pearson Scott Foresman). The *Investigations* curriculum incorporates years of research about how children learn mathematics and the vision for mathematics education as described in *Principles and Standards for School Mathematics*. Various resource materials are used in conjunction with the program. Manipulatives such as unifix and interlocking cubes, base ten blocks, Geoblocks, pattern blocks, color tiles, geometric solids, fraction bars, decimal squares, calculators and other technologies, are used as tools to engage students in thinking about and interacting with mathematical concepts.

In grade 2, students work with important groupings and patterns in our number system as they count and combine coins and things that come in 2’s, 5’s, and 10’s; gain facility with addition pairs involving 10’s and doubles; explore strategies for doubling numbers; find patterns based on multiples of 2, 5, and 10; and solve addition and subtraction story problems. They learn to decompose numbers into smaller parts (especially parts involving 10’s, 5’s, and 1’s), they count and combine groups of 5’s and 10’s, they find patterns on 100 charts, and they find combinations of 100 (e.g. $30 + 70$, $98 + 2$, $50 + 25 + 25$).

In other content strands, students explore rhythmic mathematical patterns and develop ways of recording these patterns for others to follow. They sort and describe two- and three-dimensional shapes, exploring how different shapes can be put together to make other shapes, and finding equivalent ways to cover a pattern or build a block. Students explore the relationship between pattern blocks and geoblocks, classify shapes, and define shapes. They explore basic ideas about area and volume. Fractions are explored in the context of halves of shapes. Students investigate halves, thirds, and fourths of rectangles and other 2- and 3-dimensional shapes. They create symmetric shapes and develop the language to describe symmetry. Students continue to investigate non-standard measurement and customary units. They collect, represent, and analyze data. Students further their understanding of time and money.

By the end of grade 2, children will demonstrate competence with the addition and subtraction facts from 0-10, and be developing their knowledge of the facts from 11-20. They will be able to add and subtract 2-digit numbers, using the 100 chart, number line, base ten blocks, mental arithmetic, etc. The emphasis should be the *value* of the 2-digit numbers (“38” as 3 tens and 8 ones) and their relationship to each other. They will use “landmark” numbers (10, 25, 100, etc.) to help them understand the value of other numbers and to compute. Standard computation is introduced in grade 3 as one approach, *after* students have established fluency with strategies. Grade 2 students spend a great deal of time representing strategies and working on efficient and

accurate methods of computation. Students need to have a strong sense of operations and properties before step-by-step procedures are introduced. Estimation, efficiency and accuracy are all key components in this process.

SCIENCE

Science literacy for all students is one of the fundamental goals of the elementary science program. Science is a way of knowing and inquiry is central to science learning. Because questions are at the core of science and technology, the students need to “tangle” with questions just as scientists and technologists do. They need to participate in projects, investigations, and design challenges that allow them to puzzle and search, raise questions, and rethink them. Like scientists and technologists, they must arrive at the essential content of science and technology through inquiry. The goal of inquiry-based learning is for the students to become questioners themselves - not just to *‘know the question’* but to *‘own the questions’*.

The elementary science curriculum is based on a constructivist approach to learning. Experiential learning – “hands-on”, “minds-on” science investigations, explorations and activities - is the core of the elementary science program. The students develop process skills and construct their understanding of science concepts and content through active involvement with materials and equipment and the systematic observation of organisms and ecosystems.

Throughout the elementary science curriculum emphasis is placed on the development of science process skills - including measuring; observing phenomena; making predictions; collecting, organizing recording, analyzing and interpreting data; formulating and generating questions; forming hypotheses; designing experiments; and drawing conclusions - and habits of mind, including curiosity, open mindedness, and persistence.

The elementary science program includes three strands which reflect the major domains of science - physical sciences, life sciences, and earth and space sciences. Each and every year, beginning in grade one and continuing through grade four, the science curriculum includes at least three units of study - one from each of the three strands. In addition, beginning in grade one and continuing through grade four, there is a unifying science theme or concept for each grade level. In the unifying concepts approach, “science learning is organized around the concepts and processes common to all the domains of science.”

“Connections” is the unifying science theme for grade two. The second grade physical science unit focuses on *Energy*. The second graders explore the concepts of interactions and systems as they observe and describe the influences that interacting objects have on each other. These explorations develop the students’ skills in identifying and describing interacting objects as systems. Using the *Scholastic SciencePlace Unit Energy* students explore four forms of energy - heat, light, sound and electricity - and the concepts - *energy moves and energy changes matter*. Based on hands-on activities from the Project AIMS resource book *Primarily Physics Investigations in Sound, Light and Heat Energy* students explore how vibrations make sounds and observe the refraction and reflection of light. Students use tuning forks, prisms, concave and

convex mirrors and other materials as they engage in these sound and light explorations. The students' understanding of sound and light energy is enhanced by their participation in two School Outreach Programs from the Acton Discovery Museums - *Light and Lasers and Sound*. Using CAPSELA materials second graders apply their understanding of systems, interactions and energy.

"Inside and Outside the Earth," a geology unit, is the earth science component of the grade two science curriculum. Through a series of hands-on investigations the students observe, describe and explore the differences and similarities between two dozen rock and mineral specimens. The students sort and classify rock samples according to different properties and learn how igneous, sedimentary and metamorphic rocks are formed. The students also learn that different kinds of rocks and minerals are used for different purposes. The students learn that rocks contain minerals and that minerals have distinctive properties that can be identified by testing them. The students test different minerals to observe different properties including streak color, hardness and magnetism. The *Scholastic SciencePlace Unit Rocks and Soils* and the *STC Rocks and Minerals Unit* are the primary curriculum resources for this unit. In addition students read a variety of fiction and nonfiction books and use the TASA CD-ROM *The Wonders of Rocks and Minerals* to extend their knowledge and understanding of geology.

Building on the concept of life cycles (introduced in grade one), second graders study and investigate the complete seed-to-seed life cycle and the growth and development of Wisconsin Fast Plants, *Brassica rapa*. The *STC Plant Growth and Development Unit* is the primary curriculum component for this unit. Through observations and hands-on activities, the students identify the different plant structures - roots, stem, leaves, flowers - and understand the functions of the different plant parts. At the beginning of the unit the students observe the structures inside bean seeds- including the cotyledon and embryo. Following this initial observation the students plant *Brassica rapa* seeds and begin a 40-day investigation of the complete plant's life cycle from seed to seed. During the first week of the 40-day investigation the students thin and transplant the *Brassica* plants. Throughout the unit and on a daily basis the students observe the growth and development of their plants and record their observations. The students study the anatomy of the flowers and investigate the role that bees play in pollination. The bee pollination activities introduce the second grade students to the concept of animal-plant interdependence. At the conclusion of the unit the students open the plant seed pods to harvest new *Brassica rapa* seeds.

Students also learn about growth and development through a chick-hatching unit, which integrates concepts from both the science and health curricula.

Using CAPSELA materials and kit the students use the engineering design process and engage in several problem-solving activities as the design, construct and test working CAPSELA systems. Students observe that different materials are used for different purposes such as rubber tires, plastic gears and the metal components in wires and battery holders. Working in teams the students conduct different investigations and redesign their CAPSELA vehicles to move at faster or slower speeds. Within the context of this unit the students experiment with gears and discover how gears can change speed and torque.

Appropriate technology applications - including use of websites, CD-ROMs and tool application software - enhance, enrich and extend the science learning for second graders.

SOCIAL STUDIES

This content studied provides a framework for defining values, skills and student experiences. This content is based on four central strands: United States and world history, geography, economics, civics and government. These strands interact with the curriculum to unify and enrich the content across grade levels. They are introduced in the primary grades and regularly reappear through the years, each time deepened and extended. At various grade levels, some strands may reflect greater emphasis depending on the focus. Along with these strands we have constructed a conceptual framework when studying a culture or period of time in our own history. These concepts, which include examining environment and resources, culture and diversity, adaptation and change, conflict and discrimination, are important to consider when building a curriculum. Integrated into this framework of knowledge are study skills, critical thinking, participation skills and developing 'historical habits of mind.' We believe that connections should be made to the fine arts, literature, religions, ethics, sciences, mathematics and technology throughout the topics of study.

'Hands on' exploration and activities are vital to an elementary social studies program. Through hands-on experiences, students to construct their own meaning and bring alive many of the historical people and stories they have studied. Throughout the grades students learn through a wide variety of resources in both classroom and museum settings.

The social studies curriculum for grade two provides opportunities for students to develop their understanding of chronology and time and to examine how we learn about the past. Students search for the answer to the question "What is Long Ago?" and begin to grasp an understanding of the broad timeline that encompasses "past" and "present." Through classroom activities and field trip experiences to the Orchard House, Concord Museum, and Walden Pond students study the daily life and environment of Concord during the time of the Alcott Family (The History of a Family) and Henry David Thoreau (The History of a Man). The students read historical stories, create timelines, examine artifacts and documents, and, during their visits to living history sites, observe clothing, houses, furnishings, tools and other implements

During the school year students learn about famous people (such as Martin Luther King Jr. and, Abraham Lincoln), national symbols (such as the American flag and symbols on coins), and specific events (such as President's Day and Flag Day).

Using the National Geographic Map Essentials materials, students learn about the attributes of a map, features in the child's environment that can be mapped, rudimentary map symbols, landforms, and basic geographical terms

TECHNOLOGY

Computers are integrated throughout the curriculum to support, reinforce, apply and enhance learning in mathematics, science, social studies, writing, reading, health, and research. Selected software titles have been designated by grade level to support specific subject areas.

School-wide, generic software tools such as Microsoft Office, AppleWorks (word processing, database, spreadsheet, drawing, painting, presentation), Internet Explorer, Inspiration, EasyBook Deluxe, Kid Pix Studio Deluxe, iMovie, and HyperStudio are used to publish and create multimedia presentation of subject material. In addition, individual software programs are available in the computer lab for teachers to supplement and enrich students' classroom projects. Some examples include TimeLiner, Dreamweaver, TERC Math, Type To Learn, and interactive video CD-ROMS from National Geographic Society.

Facilities in every elementary school include a computer lab, wireless mobile labs, and at least one computer and ActivBoard in every classroom. Internet access is available in each classroom as well as the school library.

HEALTH

The overall goal of the health education program is to provide students with the knowledge, skills and habits of mind needed to make healthy, self-enhancing decisions. This goal is further supported and aligned with the core concept of the Massachusetts Health Education Curriculum Framework, which states, “ the aim of teaching comprehensive school health education is to develop and nurture resilience, which is the ability to thrive, persevere, and maintain a positive attitude and healthy body.... By beginning in the early years to educate and promote the well being of students, school health programs help them to avoid future problems like substance abuse, eating disorders and school failure. Students learn how to develop and maintain their own physical wellness and personal relationships; they discover that health means much more than the absence of disease or the avoidance of danger. Making choices that promote health and well-being can make life more productive and rewarding.”

Research on developing resiliency in children supports the notion that this overall goal is best achieved by continuing to build strong partnerships between parents, teachers, administrators and the community-at-large. In keeping with the spirit of this partnership, it is our practice to inform parents about the health education curriculum specific to each grade level, so that the topics taught can be discussed, supported and introduced at home.

This practice complies with the 1996 Massachusetts Parent Notification Law, which requires districts to inform parents/guardians about the content of the human sexuality component of the program. The law also requires districts to make materials available for parent viewing and to provide parents/guardians the option of whether or not their child participates in the learning of

the human sexuality curriculum. These requirements have been common practice in Concord at the K-5 level since the inception of the human sexuality segment of the program since 1995.

In grades K-5, strands from the Department of Education Health Frameworks document organize the health education curriculum that are introduced in kindergarten and developed in an age appropriate way through grade 5. These include: Growth and Development, Physical Activity & Fitness, Nutrition, Reproduction and Sexuality, Mental Health, Family Life, Interpersonal Relationships, Disease Prevention, Safety & Injury Prevention, Tobacco, Alcohol & Other Drugs, Violence Prevention.

Throughout the K-5 curriculum, emphasis is on developing skills such as problem-solving, decision-making, and social skills including communication, empathy and assertiveness, and habits of mind, including open-mindedness, flexibility, curiosity, sense of interdependence and acceptance of personal, social and civic responsibility. Classroom teachers, with assistance from our school Social Workers and Health Curriculum Specialist, have been trained in the Wellesley College *Open Circle* Social Competency program to meet the health education standards in the Social Emotional Health Strand.

In grade 2, the curriculum continues to progress from the understanding of the physical and emotional aspects of a healthy person to the social needs that family, friends and other community members provide, including the responsibility each person has in making healthy decisions and developing healthy relationships.

Topics covered are self-esteem, dealing with feelings, friendships, families; nutrition/fitness, personal hygiene, support systems and safety rules, drug awareness including effects on body systems, and growth and development concepts studied through a chick hatching project. The Concord Fire Department will present the SAFE fire prevention program.

In an effort to help students recognize the connections with other academic areas, a number of health topics are integrated with self, family and community themes taught in social studies; with life-cycle, growth and development concepts taught in science; with literature selections that reinforce language arts and library media curricular goals; with math skills and concepts such as graphing and measuring; with classroom management, conflict management and social skills reinforced each day in the classroom, and with fitness concepts stressed in physical education. Health topics and skills are being modified to incorporate instructional approaches using technology.

ART

The K-5 art program gives children another language for learning. Children are encouraged to express themselves through their art to draw inspiration from observation, imagination, personal experience and classroom study. A variety of two- and three-dimensional processes are explored and then used as a means to realize personal expression. Reflection and discussion are important

elements of each art experience, fostering insights which may be applied to future learning. Art classes are one hour in length to accommodate a dialogue and a presentation of a daily lesson, a time for students to work through ideas, and time to wrap up with sharing of solutions which articulate learning.

MUSIC

The music program in grade two (one forty-five minute class per week) is built on a foundation of feeling the steady beat and singing and listening to a varied seasonal and multi-cultural repertoire of songs. Abstract thinking skills develop through labeling previously explored concepts, including rhythm, melody, form and harmony. Musical skills begin to be refined by playing rhythmic and melodic percussion instruments and by creating accompaniments. Simple folk dances, movement and games are introduced in order to keep students actively involved and to extend learned concepts.

PHYSICAL EDUCATION

The physical education program (one hour class per week) offers children a variety of creative motor experiences that promote healthy attitudes toward exercise. The physical education program offers vigorous and non-vigorous activities that build skills, strength, speed, coordination, self-confidence, and self-image. Social and emotional development is addressed through the teaching of concepts such as cooperation, problem solving, team building, fair play, and respect for human differences. The physical education program clearly plays a vital role in the education of the whole child. Doing one's "personal best" is a theme at all grade levels.

In grade two, the physical education program emphasizes intermediate skill development in movement patterns, ball activities, and fitness through participation in organized team games, cooperative activities, gymnastics, and dance. Sportsmanship and fair play are emphasized.

LIBRARY MEDIA

Learning Expectations - Grade 2

Second grade students will build on skills learned in previous years. In addition, second grade students will develop the ability to:

- Understand differences between picture books, chapter books, nonfiction books and biographies
- Independently select books for recreational reading that are of interest and of the appropriate reading level

- Identify all parts of a book including the title page, copyright page, table of contents, glossary and index
- Use the table of contents and index to locate information in a book
- Understand the general arrangement of the library, including the location of the fiction, nonfiction and reference sections
- Understand that the on-line catalog may be used for finding books within the library
- Develop skills in alphabetizing and number order
- Use reference books, electronic resources and the Internet to locate simple facts

ALA Information Literacy Standards for Student Learning

Standards 1, 2, 4, 5, 9 performed to BASIC level

CONCORD ELEMENTARY SCHOOLS - HOMEWORK GUIDELINES

What Is Homework?

Homework is any assigned activity done outside of school which relates to any phase of learning. It should be an enrichment and a reinforcement of learning activities. It should not be used to teach something new, to fulfill a time requirement, or to punish. From time to time homework may also be used to encourage discussion among family members and to provide linkages between home and school.

Purpose of Homework

1. To supplement and reinforce skills and work done in class.
2. To enrich the child's school experience.
3. To provide opportunities to use skills/knowledge learned in school in creative ways outside of school.
4. To promote individual responsibility.
5. To teach the child how to budget time and organize materials.
6. To promote independent study and research skills.
7. To develop leisure interests in learning that will enhance later experiences in life.

Role of Student

1. To be responsible for the completion of assignments.
2. To confer with parents and/or teachers if assignments are not clear or are too difficult.

Role of Teacher

1. To communicate with parents early in the year about homework expectations.
2. To design homework to accomplish a specific purpose closely related to the curriculum for the grade level.
3. To insure that homework assignments are clear.
4. To assist student in learning how to study.
5. To examine completed assignments so that they can be utilized efficiently in instruction.
6. To communicate with the child and parents when problems concerning homework arise.
7. To vary types of assignments so as to hold the child's interest and to meet different needs.

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CONCORD ELEMENTARY SCHOOLS - HOMEWORK GUIDELINES (cont.)

Role of Parent

1. To encourage the child to accept the responsibility for completing home assignments.
2. To provide a quiet study environment.
3. To assist the child when the teacher and parent have conferred and agreed that this assistance would be helpful.
4. To monitor the time spent on homework and to confer with the teacher if the amount of time appears to be consistently excessive or too little.
5. To confer with the teacher if assignments seem consistently unclear or too difficult.
6. To notify the teacher if an unforeseen occurrence prevents the child from completing an assignment.

Guidelines for Time and Frequency

Grade Level	Time	Frequency
Kindergarten	Discretion of teacher	
Grade 1	Discretion of teacher	
Grade 2	Discretion of teacher	
Grade 3	20 minutes*	Monday through Thursday
Grade 4	30 minutes*	Monday through Thursday
Grade 5	45 minutes*	Monday through Thursday

**A guideline is by its nature an approximate standard meant to convey to parents the average amount of time the teacher anticipates a student will need to spend on homework. Homework time will vary from student to student and from day to day. Teachers may also give additional assignments such as reading independently, writing journals, or keeping up with current events. They may also give long-term assignments such as research reports or book-related projects.*