

Pine Point School

4th Grade Curricula 2009-10

Language Arts

The fourth grade language arts curriculum integrates reading, writing, speaking, and listening throughout all learning experiences and activities. With the use of trade books, the reading curriculum strikes a balance between language experiences and direct instruction so that it can meet the individual needs of our students. Students will be capable of perceiving, interpreting, and evaluating a variety of printed material and will be motivated to read both for enjoyment and for information. The reading program is supplemented by direct phonics instruction to assure the mastery of word attack skills. The curriculum allows the integration of reading with other subject areas.

The fourth grade writing curriculum encompasses skills related to spelling, phonics, written expression, grammar, and handwriting. Mastery of language arts skills will enable students to speak and write effectively in a variety of setting for different purposes.

- Reading

- Word recognition/Vocabulary: phonics, vowels, dictionary skills, structural analysis (base words, prefixes, and suffixes), and content

- Literature: genres, concepts (figurative language, themes)

- Comprehension: literal, interpretive/inferential, modes (silent, oral, independent)

- Study Skills: types of books, sources of information, book skills (glossary, index, and copyright page)

- Writing

- Grammar: parts of speech, sentences (parts, structure), paragraphs

- Mechanics: capitalization, usage, punctuation, spelling

- Written expression: prewriting, composition (narrative, expository, poetry, research); 6 –Traits and the writing process.

- Revision: edits, proofreads

- Speaking and Listening

- Speaking:

- Pace

- Volume

- Diction

- Purpose: solve conflicts, express ideas in a respectful manner, practice commenting, questioning, and critiquing, book reports, research reports, interviews

- Posture

- Oral Reading/Interpretation: recite poems, plays, participation in group discussions, recalling events, telling stories, present reports

- Listening

- Purpose: follow directions, respond appropriately, distinguish between fact and opinion, attend during discussions

- Appreciation

- Posture

Assessment

Evaluation of skills is based on daily writing assignments, spelling dictations, research topics, daily oral language, quizzes and reviews, and participation in directed lessons. Students are evaluated continually by classroom teachers with regard to individual growth and achievement.

Bibliography

Trade books: The fourth grade has an extensive collection of trade books. The following is a list of frequently used literature.

Seal Child
The BFG
The Hundred Dresses
The Phantom Tollbooth
In The Year of the Boar and Jackie Robinson
The Voyage of Patience Goodspeed
Be a Perfect Person in Three Days
The Borrowers
Bud Not Buddy
The Orphan of Ellis Island
Nory Ryan's Song
Shiloh
The Grand Escape
Lily's Crossing
So Far From Home
Esperanza Rising

Texts and Resources

Daily Oral Language
Daily Analogies
Writers Express
Spellography
Vocabulary from Classical Roots
Time for Kids

Mathematics

The fourth grade math curriculum is based on the philosophy that to learn about math and to become effective problem solvers, students need a solid background of basic facts and skills. **To that end, daily drill and practice at home is necessary to gain and maintain computational fluency in all basic math facts.**

In all areas of study including numeration, basic operation, fractions, geometry, measurement, and computers, the emphasis is on understanding the process being used rather than on rote memorization of ways to get to the right answer. Whenever appropriate, students are given the opportunity to use manipulative materials. Once the basic ideas, facts and skills are developed, students are asked to apply these skills to problem solving situations.

The fourth grade math curriculum supports and applies the *Principles and Standards for*

School Mathematics established in 2000 by the National Council of Teachers of Mathematics. The Principals address equity, curriculum, teaching, learning, assessment, and technology, while the Standards include content (number & operations, algebra, geometry, measurement, data analysis & probability) and process (problem solving, reasoning & proof, communication, connections, and representation). See *Principles and Standards for School Mathematics*, NCTM.

Text: *Mathematics*, Scott Foresman/Addison Wesley, 2001 edition

Workbooks, Materials, and other Resources: a variety of manipulatives and activities are used to support the curriculum and enhance mathematical understanding, including

- base ten blocks, fraction bars, flash cards, pattern blocks, tangrams, geometric solids, calendars, analog practice clocks, etc.
- NCTM, *Arithmetic Teacher* (magazine), *Curriculum and Evaluation Standards for School Mathematics*, 2000
- *Practice, Reteaching, Enrichment, Problem Solving*, and *Critical Thinking* blackline masters, Scott Foresman, 2004
- trade books – *G is for Googol*, *Sir Cumference and the Great Knight of Angleland*, etc.
- *The Mad Minute: A Race to Master the Number Facts*, Addison –Wesley Publishing

Fundamental Topics

Number:

Place value:

understand structure of base-ten number system
represent and compare whole numbers to millions

Quantity to 1,000,000:

understand concept of, read and write, compare,
compose and decompose numbers

Find multiples and factors

Explore primes and composites

Fractions and decimals:

understand as parts of wholes or collections, locate on number lines,
use proper notation (numerator and denominator),
identify and compare mixed numbers and improper fractions,
write and use decimals to hundredths,
compare commonly used fractions and decimals

Operations:

Addition reinforcement:

basic facts, add multi-digit numbers with/without regrouping,
apply commutative and associative property of addition, estimate sums,
add commonly used fractions (same denominators) and decimals

Subtraction reinforcement:

basic facts, subtract multi-digit numbers with/without regrouping,
estimate differences, fact families,
subtract commonly used fractions (same denominators) and decimals

Multiplication:

select appropriate methods or tools,

multiply by multiples of ten and one hundred,
master basic multiplication facts
solve multi-digit: multiplication w/ 1 and 2 digit multipliers
estimate products by rounding,
apply the associative and commutative properties

Division:

select appropriate methods or tools
basic division facts
solve multi-digit by one-digit divisors and multiples of 10 and 100
understand inverse of multiplication

Algebraic Topics:

Express mathematical relationships using equations
Use a letter or symbol to represent the idea of a variable as an unknown quantity
Use commutative, associative, and distributive properties to compute (whole numbers)
Describe and make generalizations about patterns

Spatial Relationships & Geometry:

Spatial awareness and perceptual relationships:
recognize shapes in the environment, relate plane to solid figures
recognize and describe congruence, similarity, and line or rotational symmetry
explore movement of shapes (slides, flips, turns)
Compare, analyze, and classify two- and three- dimensional shapes
Identify: right angle, parallel and intersecting lines, types of polygons, diameter, perimeter, circumference

Measurement:

Time: tell time to any position (analog & digital), determine elapsed time, estimate time
Weight: choose and use appropriate customary units (oz., lbs., tons)
Capacity/Volume: choose and use appropriate customary units (cup, pint, quart, gallon)
Length: choose and use appropriate customary (in, ft, yd, mile) and metric (cm, m, km)
make simple conversions within a system of measurement, compute perimeter
Area: compute area of squares, rectangles, and simple polygons

Data Analysis and Probability:

Design investigations, collect data, represent data using tables and graphs (line & bar)
Form conclusions and make predictions based on data
Describe events as likely or unlikely, predict and test the probability of outcomes

Problem Solving:

Analyze word problems:
recognize question and necessary information, and choose an operation

solve multi-step problems
choose sensible answer (estimate, exact, interpret remainder, multiple solutions)

Select and apply a variety of strategies, including:
using objects, pictures, diagrams, graphs
making a table or organized list
finding a pattern
using logical reasoning
solving a simpler problem
working backward

Assessment: At the beginning of the year each child is given a diagnostic screening test (*DST*, Slosson Educational Publications, Inc.) and an inventory test (*Diagnosing Readiness for Grade 4*, Scott Foresman). Students work in small groups and are evaluated continually by classroom teachers based on participation in group activities, math journals, chapter and quarterly tests, and individual written assignments. **By the end of October, fourth grade students are expected to have mastered the multiplication facts through 12 x 12.**

Science

The fourth grade science curriculum focuses on exploration in two major science areas: Biology and Earth Science. Conservation and ecology underlie all our science studies and general science concepts relating to physics and chemistry are addressed within these content areas. Using a large number of diverse activities, experiments and field studies, students will continue to develop and refine the scientific skills needed to explore their world. The program is inquiry based and is often integrated with the Social Studies curriculum as well as Language Arts, Math, and the Arts wherever possible.

Topics of Study

1. The Ocean

- A. Hydrologic cycle
- B. Properties of fresh and saltwater
(density, salinity, cohesion)
- C. Food chain/web and photosynthesis
- D. Waves, tides, currents
- E. Marine habitats and ocean zones
- F. Marine/coastal animal (benthic, pelagic) and plant classification

2. The Changing Earth

- A. Water (hydrosphere)
- B. Major surface features and how they change

- (a.) Weather and Erosion
- C. Science and Technology
- D. Developments in Science
(contributions and influences)

3. Energy and the Environment

- A. Human Effects on the Environment
- B. Alternative energy sources

Field studies and service learning opportunities include:

- International Coastal Clean-up (Sandy Point, collect and analyze data)
- Planting dune grass (Napatree, East Beach, RI)
- Investigating current and future environmental concerns

Skills/Concepts

observing, collecting data, comparing, classifying, measuring, predicting, researching, analyzing, and problem solving

Assessment

Students will be given the opportunity to work individually, and in large and small groups to complete experiments, observe demonstrations, complete lab reports, take field study trips, do research, and complete projects. Evaluation will be done continuously by classroom teachers based on participation in group discussions, completion of oral and written assignments, quizzes, and projects.

Resources and

Field Experiences: Mystic Marineline Aquarium
Mystic Seaport Museum
Pine Point's Oceanology Boat *Quest*
Elihu Island and Sandy Point in Little Narragansett Bay
East Beach and Napatree Point, Block Island Sound
International Ice Patrol, Groton, CT
Marine Safety Lab, Groton, CT

Books: Holling, Holling C., *Seabird*
Lambert, David, *The Kingfisher Young People's Book of Oceans*
Coulombe, *The Seaside Naturalist*
Pinet, Paul R., *Invitation to Oceanography*
Van Cleave, Janice, *200 Goopy, Slippery, Slimy, Weird, & Fun*

Social Studies

Introductory Statement

It is primarily through social studies that students learn the knowledge, skill, and values they need to become productive citizens. Using two major social studies units, (Immigration/Heritage and Whaling/Transportation) plus *Time for Kids*, the following disciplines are explored: geography, history, political science, economics, and sociology. Social studies takes on added meaning when integrated with other subjects. Whenever possible activities and lessons are incorporated into the language arts, science, math, and reading curricula.

Concepts/Skills

I. Geography

A. Land Masses

1. Identify hemispheres (Northern, Southern, Eastern, Western)
2. Identify seven continents

. Distinguish between city/town, state, country, continents

. Identify some Pacific Islands and how they were formed

B. Bodies of Water

1. Classify bodies of water: oceans, rivers, streams, lakes, seas, bays, estuaries, straits
2. Identify oceans: Pacific, Atlantic, Antarctic, Indian, (Arctic)
3. Recognize that the ocean bottom is similar in topography to the land

C. Map Skills

1. Recognize and understand map symbols
2. Read maps using -
 - a. scale
 - b. legend
 - c. compass rose
 - d. longitude/latitude
3. Know how to use direction for locating places on a map
4. Recognize different types of maps and their purposes

D. Study of Immigration to the United States

1. Identify the countries and regions that produced major waves of immigration
2. Identify the routes that the immigrants followed
3. Identify “push”/”pull” forces
4. Recognize the topographical features that presented obstacles to each group
5. Recognize how climate and resources affects immigration
6. Locate areas where different immigrant groups settled

II. History

A. Immigration to the United States

1. Identify significant dates of waves of immigration
2. Identify significant leaders who influence(d) immigration
3. Appreciate historical perspective as it pertains to immigration
4. Compare and contrasts history of a foreign country with that of the United

States

States

5. Understand push and pull factors that led people to immigrate to the United
6. Recognize the changes in health problems and health care since the 1880’s

B. Current Events

1. Understand current issues, events, and trends affecting immigration and

emigration

2. Be aware of current world, national, and local news events
3. Use and evaluate different news sources
4. Differentiate between primary and secondary sources

C. Transportation

1. Identify different forms of transportation from 1818 to present
2. Trace progression of transportation from whalers to air and space travel.

III. Political Science

A. United States Government

1. Understand the basic foundations of US government
 - a. Constitution and Bill of Rights_
 - b. Election procedures and

political process

- c. Three branches of government (legislative, executive, and judicial) –

checks and

balances

2. Recognize the political push and pull forces affecting immigration to the US
3. Identify changes in whaling regulations and laws

B. Foreign Country

1. Identify foreign political foundations
2. Compare and contrast government of foreign country with the United States
3. Understand the political push forces of emigration from a foreign country
4. Identify causes and results of changes in international whaling regulations

and laws

IV. Economics

A. Whaling

1. Discuss indigenous vs. commercial whaling
2. Understand the environmental interests vs. economic interests of whaling
3. Identify the cargo whaling vessels carried
4. Understand the economic relationships within a whaling village
5. Explain economic relationships on a whaling vessel
6. Identify industries relying on whaling
7. Understand bartering system

B. Immigration

1. Understand the ways plants and animals migrate and affect environmental and economic change
2. Identify the economic push and pull factors affecting emigration and

immigration

3. Understand the economic advantages and disadvantages that emigration and immigration create(ed)
4. Understand how economic conditions impacted the immigrants' experiences

V. Sociology

A. Foreign Country

1. Define heritage
2. Identify customs
 - a. Dress
 - b. Food
 - c. Holidays
3. Compare and contrast different lifestyles
 - a. Language
 - b. Religion
 - c. Education
4. Examine the arts and literature of another country
5. Identify measures of quality of life in various countries

B. United States

1. Analyze attitudes of Americans toward immigration then and now
2. Recognize culture shock and its impact on immigrants
3. Understand the assimilation process and its difficulties
4. Recognize the social issues that pushed people to immigrate to America
5. Identify some of the challenges faced by new immigrants today
6. Understand the impact of prejudice on immigrants
7. Recognize the impact immigrant cultural traditions had/have on the US

Activities/ Materials:

- . *Seabird*, by Holling C. Holling – this book serves as the basis for our first unit on Whaling, Transportation, and the Ocean
- . Field Studies:
 - . Mystic Seaport Museum – overnight on the Joseph Conrad, hands on activities in the 1860's village, Voyages Exhibit and other museum exhibits
 - . Ellis Island and Lower East Side Tenement Museum
 - . Mystic Aquarium
- . Guest speakers and role players
- . *The Kingfisher Young People's Book of Oceans*
- . Primary and secondary source material
- . *Time for Kids*, television, internet, radio, newspapers
- . *A Nation of Immigrants* (mini-textbook)
- . *Journey to Ellis Island* and other oral histories
- . *Orphan of Ellis Island*, *Nory Ryan's Song*, and other historical fiction trade books
- . *Island of Hope*, *Island of Tears*, and other videos

Assessment

Students work cooperatively in large and small groups and are evaluated continually by classroom teachers based on group participation and satisfactory completion of written assignments and post-tests.

French

The Lower School World Language Program emphasizes communication using familiar thematic units, cultural contexts and everyday social situations. We encourage active classroom participation through listening and speaking skills, in addition to writing and memorization of vocabulary words. Many units are cross-curricular themes related to the core subjects taught in the home base classroom. Our goal is to have students gain knowledge about the linguistic and cultural differences, and be comfortable in either a Hispanic or Francophone environment.

Fourth Grade Themes

Review of Kindergarten, First, Second & Third Grade topics & themes

Marine Animals & Vocabulary

Geography of Europe

Immigration (travel information: name, age, origin, physical description)

Spanish

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Fourth Grade Themes

Review of Kindergarten, First, Second & Third Grade topics

Marine Animals & Vocabulary

Geography of Latin America

Immigration (travel information: name, age, origin, physical description)

Music

The music curriculum for children grades K-4 includes performing, creating and responding to music through specific experiences (the building blocks of musical learning): singing songs and playing instruments, moving to music and creating melodies and accompaniments, listening and experiencing the music of various cultures, styles and periods. In order to equip our students to participate fully in this diverse society, they must understand their own historical and cultural heritage and those of others around them. Because music is inherent in basic human expression, every child should have access to a balanced, comprehensive, and sequential program of study in music.

I. Content Standard: Singing, alone and with others, a varied repertoire of music

Achievement Standard:

Students

- A. sing independently, matching pitch and rhythm with appropriate diction and posture, maintaining the steady beat
- B. sing expressively with good vocal production and with appropriate dynamics and phrasing
- C. sing from memory a varied repertoire of songs representing styles from diverse cultures
- D. sing in groups, blending vocal timbres, matching dynamic levels and responding to the cues of a conductor
- E. sing ostinatos, partner songs and rounds

II. Content Standard: Performing on instruments, alone and with others, a varied repertoire of music

Achievement Standard:

Students

- A. perform easy rhythmic and chordal patterns accurately and independently on classroom instruments

- B. perform accurately simple rhythms, maintaining the steady beat
- C. accurately echo rhythmic and melodic patterns
- D. perform independent instrument parts while other students sing or play contrasting parts (three or more different parts)

III. Content Standard: Improvising melodies, variations, and accompaniments

Achievement Standard:

Students

- A. improvise rhythmic and melodic ostinato accompaniments
- B. improvise short songs and instrumental pieces using a variety of sound sources, including traditional and nontraditional sounds available
- C. improvise "answers" in the same style to given rhythmic and melodic phrases

IV. Content Standard: Reading and notating music

Achievement Standard:

Students

- A. read notes (whole, half, dotted half, quarter and paired eighth) and rests (whole, half and quarter) in 2-4, 4-4 and 3-4 meters
- B. identify and demonstrate symbols for dynamics and tempo: piano, forte, crescendo and decrescendo; presto, allegro, andante and largo
- C. identify by note name all of the notes of the treble clef
- D. use standard symbols of rhythm (whole, half, dotted half, quarter and paired eighth notes and whole, half and quarter rests in 2-4, 4-4 and 3-4 meters) to notate simple patterns

V. Content Standard: Listening to, analyzing, and describing music

Achievement Standard:

Students

- A. identify, aurally and visually, a variety of instruments including orchestral and band instruments as well as instruments from various cultures
- B. respond through purposeful movement to selected music characteristics (tempo, meter, dynamics) while listening to the music

VI. Content Standard: Understanding music in relation to history and culture

Achievement Standard:

Students

- A. identify various uses of music in their daily experiences (e.g. celebrations, worship, movies and television)
- B. demonstrate appropriate audience behavior
- C. identify and describe roles of musicians in various music settings and cultures

VII. Content Standard: Understanding relationships between music, the other arts, and disciplines outside the arts

Achievement Standard:

Students

- A. identify similarities and differences in the meanings of common terms used in the various arts (e.g. form, line, contrast)
- B. identify ways in which other subjects and disciplines are interrelated with those of music (e.g. language: singing in foreign languages, learning to read; math: the basis of rhythmic notation;

science: the physics of sound production; geography: songs associated with various countries or regions)

Bibliography

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Voices in Harmony, Shelley Nordlund and Jan Hall, Hal Leonard Corp. 1997