

### Algebra

Students will develop confidence exploring basic mathematical patterns and relationships and applying them in problem solving. They will:

- Use the commutative, associative, and identity properties.
- Discover a rule in a set of ordered pairs (ie: the second number is the result of doubling the first)
- Explore order of operations.

### Mathematics of Change

Students will understand the connection between rates of change (time, speed, cost per unit, temperature, etc.) and representation (discrete and continuous change and relation to slope/straight line) on a coordinate graph.

- Identify real situations and events that show change
- Interpret and compare rates of change on a graph to see the slope.

## SCIENCE

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### Physical Science

**Exploring Energy/Electricity:** Study basic concepts of circuits, electrical current, conductors, insulators, electromagnets, and energy transfer through inquiry-based explorations.

### Life Science

**River/Stream Ecosystem:** Study local plant and animal species with focus on classification, life cycles, interdependence, habitat assessment, environmental stewardship and conservation, culminating in the annual Student Watershed Congress.

### Earth/Space Science

**Geology:** The Changing Earth: Investigate introduction to Plate Theory, Earth's layers, rock & water cycles, rock/mineral identification/classification, and weathering/erosion.

**Meteorology:** Study collection and weather prediction using real-world tools and data.

*September, 2009*

# LEBANON SCHOOL DISTRICT GRADE 4 CURRICULUM

## *A Message for the Parents:*

The outlines in this pamphlet are the products of several years of ongoing curriculum work by the administrators and teachers of the Lebanon School District. Using National Standards and the New Hampshire State Curriculum Frameworks as guides, the district staff has completed documents of content and skills for Language Arts, Mathematics, Social Studies and Science that have been adopted by the Lebanon School Board. This pamphlet includes the scope and sequence outlines from those documents.

The curriculum documents that have been completed will ensure the fulfillment of two district goals: (a) that the content and skills are taught in our classrooms are in alignment with the state frameworks, and (b) that the consistency and continuity of curriculum and instruction will be enhanced in schools across the district. The district's focus is on the refinement of the curricula as we meet the needs of diverse learners in the regular classrooms. Curricular accountability is ensured through the use of the New England Common Assessment Program (NECAP) tests and other district wide assessments.

This pamphlet is designed to help parents understand the classroom curriculum for a given grade. Your child's teacher can give you more detail about the presentation of topics and the expectations for students. We hope that this information will help you to support your child's learning and to contribute to the continued improvement of curriculum and instruction in the district. Public knowledge and input are critical to the ongoing curriculum review process. We invite parents and community members to participate in the process and to provide comments and recommendations.

Michael Harris, Ph.D., Superintendent

## READING

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### *Construct Meaning*

- Read fluently and accurately with understanding utilizing multiple sources of information
- Determine literal meanings, summarize materials, and develop informed inferences, judgments and interpretations from texts
- Compare and contrast authors' styles and themes

### *Comprehension Skills & Strategies*

- Use strategies to think about meaning before, during and after reading (set a purpose, rereading, predicting and confirming, previewing and skimming, generating questions, relating to one's own experiences, and using graphics, inserts and footnotes)
- Pre-read texts for structure (summaries, headings, tables, illustrations and organization)
- Trace character development and change through actions, decisions thoughts and challenges presented
- After reading, identify main ideas, supporting details, main and supporting characters, external conflicts, foreshadowing, suspense and climax

### *Vocabulary & Reading New Words*

- Utilize the multiple sources of information available to read and understand words with sufficient fluency in context to focus on meaning
- Use increasing knowledge of letter clusters, suffixes, prefixes, roots and compound words

### *Information Gathering*

- Use information from multiple sources and information retrieval systems
- Use the thesaurus, almanac, periodicals, catalogs, and phone books in addition to basic reference tools
- Explore the Internet to gather information
- Manage long-term research tasks and projects
- Organize, analyze and evaluate information using a variety of tools
- Use skills of reading, writing, speaking and listening to produce effective presentations in the appropriate media

### *Literature*

- Differentiate among a wide variety of genres: short stories, mysteries, poetry, drama, biographies, autobiographies, legends, historical fiction, science fiction, adventure, informational/ factual articles
- Demonstrate competence in understanding, appreciating, interpreting and critically analyzing recognized literature from a wide variety of eras and cultures: poetry, stories, novels, myths and legends, speeches and author studies

## WRITING

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*Write effectively for a variety of purposes and audiences including creative, expository, narrative, persuasive and practical writing*

- Use facts and logic to support a position
- Organize writing appropriately using chronological order, ordered examples, or compare and contrast
- Use paragraphing to show changes in central idea, examples, dialogue and other elements of topic development
- Write friendly letters, reports, news articles scripts, captions, interviews, fiction, poetry, biography, invitations, charts and songs
- List sources for research papers

*Use a variety of techniques before, during, and after to generate ideas, plan, draft, revise, edit and publish*

- Before writing, identify the topic, choose appropriate form and content, use knowledge and experiences to generate ideas, and use strategies to organize ideas
- During writing, analyze their own writing independently and in collaboration with others
- Use revising and editing strategies to improve the writing
- After writing, proofread for spelling based on personal spelling lists and other word lists and for adherence to grammatical rules such as verb tense and subject-verb agreement
- Publish writing in a variety of forms including news articles

*Maintain meaning through correct grammar, usage and mechanics*

- Use capitalization, punctuation, dialogue and abbreviations correctly
- Recognize complete and incomplete sentences and names for parts of speech
- Indent paragraphs
- Follow grammatical conventions: double negatives, subject-verb agreement, pronoun and antecedent agreement, using helping verbs to establish tense, and using complete sentences

## SOCIAL STUDIES

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*The American Revolution*

*State of New Hampshire*

*Medieval Societies in the Middle Ages*

*Geography: 5 themes as a focused unit*

*Current Events*

## MATHEMATICS

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**Students will effectively communicate accurate mathematical reasoning in problem solving contexts integrated across diverse curriculum disciplines and everyday situations. They will apply skills from the following math sub-categories:**

### *Number Sense*

Students will work towards proficiency in understanding and applying concepts of: place value (thousandths to millions), whole numbers/decimals/fractions, ratios and proportions, and positive and negative numbers in everyday situations (ie: thermometer). They will recognize and use the relationship between inverse operations: addition/subtraction and multiplication/division.

### *Computation*

Students will accurately and efficiently:

- Add and subtract whole numbers, fractions, and decimals,
- Demonstrate mastery of multiplication facts up to 12 x 12. Develop division facts from multiplication facts.
- Multiply and divide whole numbers and decimals (in money format) with 1-digit divisors.
- Use estimation to determine the reasonableness of an answer.
- Recognize the associative, commutative, and identity properties in computation problems.

### *Geometry*

Students will explore concepts in:

- Linear (ie: perpendicular, parallel, horizontal, vertical), 2-D (properties of polygons and circles), and 3-D (sphere, cylinder, prism) contexts.
- Coordinate geometry, including symmetry and transformations (translations, reflections, and rotations).

### *Measurement*

Students will explore and apply appropriate units in Metric and U.S. Standard systems in: linear, area, weight/mass, volume/capacity, temperature, time, and money contexts.

### *Data Analysis*

Students will confidently:

- Collect, organize, and present data using the appropriate graphic format (picture, bar, or line graph).
- Analyze and interpret data of a given set.
- Make predictions based on interpretation of probability of an event happening.