

TRB³

Elementary Science Teacher Resource Book

A PROFESSIONAL DEVELOPMENT
RESOURCE FOR TEACHING
CORE CURRICULUM

GRADE 4

LITERACY -- STRATEGIES – ASSESSMENT

Utah State Office of Education

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5. Fourth Grade Language Arts and Math Cores



Fourth Grade Language Arts Core Curriculum

STANDARD 4000-01: ORAL LANGUAGE

Objective 0101: Develop language through listening and speaking

- Identify specific purpose(s) for listening (e.g., to gain information to be entertained).
- Listen and demonstrate understanding by responding appropriately (e.g., follow multiple-step directions, restate, clarify, question, summarize, elaborate formulating an opinion with supporting evidence).
- Speak clearly and audibly with expression in communicating ideas (e.g., effective rate, volume, pitch, tone, phrasing, tempo).
- Speak in complete sentences with appropriate subject-verb agreement and verb tense.

Objective 0102: Develop language through viewing media and presenting.

- Identify specific purpose(s) for viewing media (i.e., to identify main idea and details, to gain information distinguish between fiction/nonfiction, distinguish between fact/opinion, form an opinion, determine presentation's accuracy).
- Use a variety of formats in presenting with various forms of media (e.g., pictures, posters, charts, ads, newspapers, graphs, videos, slide shows).

STANDARDS 4000-02: CONCEPTS OF PRINT

Objective 0201: Demonstrate an understanding that print carries "the" message.

- Recognize that print carries different messages. **(Mastered/Maintained)**
- Identify messages in common environment print (e.g., signs, boxes, wrappers). **(Mastered/Maintained)**

Objective 0202: Demonstrate knowledge of elements of print in a text.

- Identify front/back, top/bottom, left/right of textbook. **(Mastered/Maintained)**
- Discriminate between letters, words, and sentences in text. **(Mastered/Maintained)**
- Match oral words to printed words while reading. **(Mastered/Maintained)**
- Identify where text begins and ends on a page. **(Mastered/Maintained)**
- Identify punctuation in text (i.e., periods, question marks, exclamation points). **(Mastered/Maintained)**

STANDARD 4000-03: PHONOLOGICAL AND PHONEMIC AWARENESS

Objective 0301: Demonstrate phonological awareness.

- Count number of words in a sentence. **(Mastered/Maintained)**
- Count the number of syllables in a words. **(Mastered/Maintained)**
- Count the number of syllables in a first name. **(Mastered/Maintained)**
- Identify and create a series of rhyming words orally (e.g., cat, bat, sat__). **(Mastered/Maintained)**
- Recognize words beginning with the same initial sound in an alliterative phrase or sentence (e.g., Six snakes sold snacks and sodas.) **(Mastered/Maintained)**

Objective 0302: Recognize like and unlike word parts(oddity tasks)

- Identify words with same beginning consonant sounds (e.g., man, sat, sick) and ending consonant sounds (e.g., man, sat, ten) in a series of words. **(Mastered/Maintained)**
- Identify words with the same medial sounds in a series of words (e.g., long vowel sound: take, late, feet; short vowel sound: top, cat, pan; middle consonant sound: kitten, missing, lesson). **(Mastered/Maintained)**

Objective 0303: Orally blend word parts (blending).

- Blend syllables to make words (e.g., /ta.../ble/, table). **(Mastered/Maintained)**
- Blend onset and rime to make words (e.g., /p.../an/, pan). **(Mastered/Maintained)**
- Blend individual phonemes to make words (e.g., /s.../a.../t/sat). **(Mastered/Maintained)**

Objective 0304: Orally segmenting words into word parts.

- Segment words into syllables. (e.g., table, /ta.../ble). **(Mastered/Maintained)**
- Segment words into onset and rime. (e.g., pan/p.../an). **(Mastered/Maintained)**
- Segment words into individual phonemes. (e.g., sat, /s.../a.../t/). **(Mastered/Maintained)**

Objective 0305: Orally manipulate phonemes in words and syllables.

- Substitute initial and final sounds (e.g., replace first sound in mat to /s/, say sat; replace last sound in mat with /p/, say map). **(Mastered/Maintained)**
- Substitute vowel in words (e.g., replace middle sound in map to /o., say mop). **(Mastered/Maintained)**
- Delete syllable in words (e.g., say baker without the /ba/, say ker). **(Mastered/Maintained)**
- Delete initial and final sounds in words (e.g., say sun without the /s/, say un; say hit without the /t/, say hi).
- Delete initial phoneme and final phoneme in blends (e.g., say step without the /s/; say tep; say best Without the /t/ say bes). **(Mastered/Maintained)**

STANDARD 4000-04: PHONICS AND SPELLING

Objective 0401: Demonstrate an understanding of the relationship between letters and sounds.

- Write letters to represent spoken sounds of all letters of the alphabet in random order. **(Mastered/Maintained)**
- Identify and pronounce all of the diphthongs (e.g., oi, oy, aw, au) and consonant digraphs (e.g., ch, sh, th, wh) accurately in words. **(Mastered/Maintained)**.
- Identify and pronounce sounds for short and long vowels, using patterns (e.g., vc, vcv, cvc, cvvc, cvc-silent e), and vowel digraphs (e.g., ea, ee, ie, oa, ai, ay, oo, ow) accurately in two-syllable words. **(Mastered/Maintained)**
- Identify and pronounce r-controlled vowel patterns in words (e.g., ar, or, er). **(Mastered/Maintained)**
- Identify and blend letter sounds to pronounce words. **(Mastered/Maintained)**

Objective 0402: Use knowledge of structural analysis to decode words.

- a. Identify and read grade level contractions and compound words. **(Mastered/Maintained)**
- b. Identify sound patterns and apply knowledge to decode words (e.g., blends, digraphs, vowel patterns, r-controlled vowels). **(Mastered/Maintained)**
- c. Demonstrate an understanding of representing same sound with different patterns by decoding these patterns accurately in isolation and in text (e.g., ee, ea, ei, e). **(Mastered/Maintained)**
- d. Use knowledge of root words and prefixes (e.g., re, un, mis) and suffixes (e.g., s, es, ed, ing, est, ly) to decode words.
- e. Use letter and syllable patterns to pronounce multisyllabic words. **(Mastered/Maintained)**

Objective 0403: Use knowledge of structural analysis to decode words.

- a. Write sounds heard in words in correct order. **(Mastered/Maintained)**
- b. Use knowledge of word families, patterns and common letter combinations to spell new words.
- c. Spell words with roots, inflectional endings, prefixes, and suffixes (e.g., faster, disapprove, celebration).
- d. Spell an increasing number of high-frequency and irregular words correctly (e.g., explain, course, several).
- e. Learn the spellings of irregular and difficult words (e.g., triangle, volcanoes, minerals, county).

Objective 0404: Use spelling strategies to achieve accuracy.

- a. Use knowledge about spelling to predict the spelling of new words.
- b. Visualize words while writing.
- c. Associate the spelling of new words with that of known words and word patterns.
- d. Use spelling generalities to assist spelling of new words.

STANDARD 4000-05: FLUENCY

Objective 0501: Read aloud grade level text with speed and accuracy

- a. Read grade level text at a rate of approximately 120-150 wpm.
- b. Read grade level text with an accuracy rate of 95-100%.

Objective 0502: Read aloud grade level text effortlessly with clarity.

- a. Read grade level text in meaningful phrases using intonation, expression, and punctuation cues.
- b. Read grade level words with automaticity.

STANDARD 4000-06: VOCABULARY

Objective 0601: Learn new words through listening and reading widely.

- a. Use new vocabulary learned by listening, reading, and discussing a variety of genres.
- b. Learn the meaning and properly use a variety of grade level words (e.g., words from literature, social studies, science, math).

Objective 0602: Use multiple resources to learn new words.

- a. Use multiple resources to determine the meanings of unknown words (e.g., simple dictionaries, glossaries, beginning thesauruses).
- b. Relate unfamiliar words and concepts to prior knowledge to increase vocabulary (e.g., settlers: Indians, pioneers, farmers).

Objective 0603: Use structural analysis/context clues to determine wd. meanings.

- a. Identify meanings of words using roots and affixes (e.g., disrespectfully).
- b. Use words, sentences and paragraphs as context clues to determine meanings of unknown key words, similes, and idioms.
- c. Use context to determine meanings of synonyms, antonyms, homonyms (e.g., there, their, they're), and multiple-meaning words (e.g., rock).

STANDARD 4000-07: COMPREHENSION

Objective 0701: Identify purposes of text.

- a. Discuss purpose for reading
- b. Discuss author's purpose

Objective 0702: Apply strategies to comprehend text.

- a. Relate prior knowledge to make connections to text (e.g., text to text, text to self, text to world).
- b. Generate questions about text (e.g., factual, inferential, evaluative).
- c. Form mental pictures to aid understanding of text.
- d. Make and confirm predictions while reading using title, picture clues, text, and/or prior knowledge.
- e. Make inferences and draw conclusions from text.
- f. Identify theme/topic/main idea from text; note details
- g. Summarize important ideas/events; summarize supporting details in sequence.
- h. Monitor and clarify understanding applying fix-up strategies while interacting with text.
- i. Compile, organize and interpret information from text.

Objective 0703: Recognize and use features of narrative and informational text.

- a. Identify characters, setting sequence of events, problem resolution.
- b. Identify different genres: fairy tales, poems, realistic fiction, fantasy, fables, folk talks, tall tales, biographies, historical fiction.
- c. Identify information from text, headings, subheadings, diagrams, charts, captions, graphs, table of contents, index, and glossary.
- d. Identify different structures in text (e.g., problem/solution, compare/contrast, cause/effect).
- e. Locate facts from a variety of informational texts (e.g., newspapers, magazines, books, other resources)

STANDARD 4000-08 WRITING

Objective 0801: Prepare to write by gathering and organizing information and ideas (pre-writing).

- a. Generate ideas for writing by reading, discussing researching, and reflecting on personal experiences.

- b. Select and narrow a topic from generate ideas.
- c. Identify audience, purpose, and form for writing.
- d. Use simple graphic organizers to organize information.

Objective 0802: Compose a written draft.

- a. Draft ideas on paper in an organized manner utilizing words, sentences, multiple paragraphs (e.g., beginning, middle, end; main idea; details; characterization; setting; plot).
- b. Use voice to fit the purpose and audience.
- c. Use strong verbs and vivid language to convey meaning.
- d. Identify and use effective leads and strong endings.

Objective 0803: Revise by elaborating and clarifying a written draft.

- a. Revise draft to add details, strengthen word choice, clarify main idea, and reorder content.
- b. Enhance fluency by using transitional words, phrases to connect ideas, and a variety of complete sentences (i.e., words in a series, dialogue, complex sentences, singular possessives, abbreviations).
- c. Revise writing, considering the suggestions of others.

Objective 0804: Edit written draft for conventions

- a. Edit writing for correct capitalization and punctuation (i.e., words in a series, dialogue, complex sentences, singular possessives, abbreviations).
- b. Edit for spelling of grade level-appropriate words.
- c. Edit for standard grammar (e.g., subject-verb agreement, verb tense, comparatives, superlatives, pronouns).
- d. Edit for appropriate formatting features (e.g., margins, indentations, titles).

Objective 0805: Use fluent and legible handwriting to communicate.

- a. Write upper- and lower-case cursive letters using proper form, proportions, and spacing.
- b. Develop fluency in cursive handwriting.
- c. Produce legible documents with cursive handwriting.

Objective 0806: Write in different forms and genres.

- a. Produce personal writing (e.g., journals, personal experiences, eye witness accounts, memoirs, literature responses).
- b. Produce traditional and imaginative stories, narrative and formula poetry.
- c. Produce informational text (e.g., book reports, compare/contrast essays, observational reports, research reports, content area reports, biographies, summaries).
- d. Produce writing to persuade (e.g., response to newspaper and magazine articles).
- e. Produce functional texts (e.g., newspaper and newsletter articles, e-mails, simple PowerPoint presentations).
- f. Share writing with others incorporating relevant illustrations, photos, charts, diagrams and/or graphs to add meaning.
- g. Publish 6-8 individual products.

Fourth Grade Math Core Curriculum

STANDARD I: Number and Operations: Students will acquire number sense and perform operations with whole numbers, simple fractions, and decimals.

Objective 1: Represent whole numbers and decimals in a variety of ways.

- Model, read, and write numerals from tenths to 100,000.
- Write a *whole number* up to 99,999 in *expanded form* (e.g., 76,539 is ten-thousands, 6 one-thousands, 5 hundreds, 3 tens, 9 ones or $70,000+6,000+500+30+9$).
- Identify the place and the value of a given digit in a five-digit numeral, including decimals to tenths.
- Demonstrate multiple ways to represent numbers by using models and symbolic representations (e.g., 36 is the same as the square of six, three dozen, or 9×4).
- Identify *square numbers* using models.

Objective 2: Identify relationships among whole numbers and decimals

- Identify the number that is 100 more, 100 less, 1,000 more, or 1,000 less than any *whole number* up to 10,000.
- Compare the relative size of numbers (e.g., 100 is small compared to a million, but large compared to 5).
- Compare whole numbers up to five digits using symbols $<$, $>$, and $=$.
- Identify a whole number that is between two given whole numbers.
- Order and compare whole numbers and decimals to tenths on a number line.

Objective 3: Model and illustrate meanings of the four operations and describe how they relate.

- Use models to represent multiplication of a one- or two-digit *factor* by a two-digit factor (up to 30) using a variety of methods (e.g., rectangular *arrays*, manipulatives, pictures) and connect the representation to an *algorithm*.
- Recognize that division by zero is not possible (e.g., $6 \div 0$ is undefined).
- Select and write a multiplication or division sentence to solve a problem related to the students' environment and write a story problem that relates to a given equation.
- Represent division of a two-digit *dividend* by a one-digit *divisor*, including whole number remainders, using various methods (e.g., rectangular arrays, manipulatives, pictures) and connect the representation to an algorithm.
- Demonstrate the multiplication and division are inverse operations (e.g., $3 \times 4 = 12$; thus, $12 \div 3 = 4$).
- Describe the effect of place value when multiplying whole numbers by 10 and 100.

Objective 4: Use fractions to communicate parts of the whole.

- Divide regions and sets of objects into equal parts using a variety of models and illustrations.

- Name and write a fraction to represent a portion of a unit whole for halves, thirds, fourths, fifths, sixths, eighths, and tenths.
- Relate fractions to decimals that represent tenths.
- Determine which of two fractions is greater using models or illustrations.
- Find equivalent fractions for one-half, one-third, and one-fourth using manipulatives and pictorial representations.

Objective 5: Solve whole number problems using addition, subtraction, multiplication, and division in vertical and horizontal notation.

- Determine when it is appropriate to use estimation, mental math strategies, paper and pencil, or a calculator.
- Find the sum and difference of four-digit numbers, including monetary amounts, and describe the process used.
- Multiply two- and three-digit *factors* by a one-digit factor and describe the process used.
- Divide a two-digit *whole number dividend* by a one-digit *divisor*, with a remainder of zero and describe the process used.

STANDARD II: Algebra: Students will use patterns and relations to represent mathematical situations

Objective 1: Recognize, describe, and use patterns and identify the attributes.

- Represent and analyze repeating and growing patterns using objects, pictures, numbers, and tables.
- Recognize and extend multiples and other number patterns using a variety of methods.

Objective 2: Recognize, represent, and solve mathematical situations using patterns and symbols

- Solve equations involving equivalent expressions (e.g., $6 \times 2 = ? \times 3$ or $6 \times ? = 9 + 9$).
- Use the $<$, $>$, $=$ symbols to compare two expressions involving addition, subtraction, multiplication, and division (e.g., $5/4 \ 9 \div 3$).
- Recognize that a given variable maintains the same value throughout an equation or expression (e.g., $“+”=8$; $“=4$).
- Demonstrate that changing the order of *factors* does not change the *product* (e.g., $2/3=6$, $3/2=6$) and that the grouping of three or more factors does not change the product (e.g., $(2/3)/1=6$; $2 \times (3+1)=6$).
- Demonstrate the distribution of multiplication over addition using a rectangular *array* (e.g., $8 \times 14 = 8$ rows of 10 plus 8 rows of 4).

STANDARD III: Geometry: Students will use spatial reasoning to recognize, describe, and identify geometric shapes.

Objective 1: Describe, identify, and analyze characteristics and properties of geometric shapes.

- Identify and draw *parallel lines* and *intersecting lines*.

- b. Identify and draw lines of symmetry on a variety of *polygons*.
- c. Identify and describe *quadrilaterals* (i.e., rectangles, squares, *rhombuses*, *trapezoids*, kites).
- d. Identify *right*, *obtuse*, and *acute* angles.
- e. Compare two polygons to determine whether they are *congruent* or *similar*.
- f. Identify and describe *cylinders* and *rectangular prisms*.

Objective 2: Specify locations and describe spatial relationships using grids and maps.

- a. Locate positions on a map of Utah using *coordinates* or *regions*.
- b. Give the coordinates or regions of a position on a map of Utah.

Objective 3: Visualize and identify geometric shapes after applying transformations.

- a. Identify a *slide (translation)* or *flip (reflection)* on a figure using manipulatives.
- b. Relate *cubes*, *cylinders*, *cones*, and *rectangular prisms* to the two-dimensional shapes (nets) from which they were created.

STANDARD IV: Measurement: Students will understand and use measurement tools and techniques.

Objective 1: Identify and describe measurable attributes of objects and units of measurement.

- a. Describe the relationship among *metric* units of length (i.e., millimeter, centimeter, meter), between metric units of capacity (i.e., gram, kilogram).
- b. Identify a mile as a measure of distance and its relationship to other *customary* units of length.
- c. Describe the relationship among customary units of *capacity* (i.e., cup, pint, quart, gallon).
- d. Estimate length, capacity, and weight using metric and customary units.

Objective 2: Determine measurement using appropriate tools and formulas.

- a. Measure the length of objects to the nearest centimeter, meter, quarter-inch, foot, and yard.
- b. Measure *capacity* using milliliters, liters, cups, pints, quarts, and gallons and measure weight using grams, kilograms, and pounds.
- c. Read, tell, and write time to the nearest minute.
- d. Read and record the temperature to the nearest degree, in Fahrenheit, using a thermometer.
- e. Determine the value of a combination of coins and bills that total \$20.00 or less.
- f. Count back change for a single-item purchase and determine the amount of change to be received from a multiple-item purchase.
- g. Determine possible *perimeters*, in whole units, for a rectangle with a fixed area and determine possible areas when given a rectangle with a fixed perimeter.

STANDARD V: Data Analysis and Probability: Students will collect and organize data to make predictions and use basic concepts of probability.

Objective 1: Collect, organize, and display data to make predictions and answer questions.

- a. identify a question that can be answered by collecting data.
- b. Collect, read, and interpret data from tables, graphs, charts, surveys, and observations.
- c. Represent data using tables, line plots, line graphs, and bar graphs.
- d. Identify and distinguish between *clusters* and *outliers* of a data set.

Objective 2: Identify basic concepts of probability.

- a. Describe the results of investigations involving random outcomes as simple ratios (e.g., 4 out of 9, 4/9)
- b. Predict outcomes of simple experiments, including with and without replacement, and test the predictions.