TRB^3

Elementary Science Teacher Resource Book

A PROFESSIONAL DEVELOPMENT RESOURCE FOR TEACHING CORE CURRICULUM

GRADE 5

LITERACY -- STRATEGIES – ASSESSMENT

Utah State Office of Education

5. Fifth Grade Language Arts and Math Cores

Fifth Grade Language Arts Core Curriculum

STANDARD 4000-01: ORAL LANGUAGE

Objective 0101: Develop language through listening and speaking

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

Objective 0102: Develop language through viewing media and presenting.

a. 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/bias).
b. Use a variety of formats in presenting with various forms of media (e.g., pictures, posters, charts, ads, newspapers, graphs, videos, slide shows).

STANDARSD 4000-02: CONCEPTS OF PRINT

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

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

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

a. Identify front/back, top/bottom, left/right of textbook. **(Mastered/Maintained)**
b. Discriminate between letters, words, and sentences in text. (**Mastered/Maintained)**
c. Match oral words to printed words while reading. **(M/M)**
d. Identify where text begins and ends on a page. (**M/M**)
e. 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.

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

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

a. 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)**
b. 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).

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

Objective 0304: Orally segmenting words into word parts.

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

Objective 0305: Orally manipulate phonemes in words and syllables.

a. 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)**
b**.** Substitute vowel in words (e.g., replace middle sound in map to /o., say mop). (**Mastered/Maintained)**
c. Delete syllable in words (e.g., say baker without the /ba/, say ker). (**Mastered/Maintained)**
d. Delete initial and final sounds in words (e.g., say sun without the /s/, say un; say hit without the /t/, say hi).
e. 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.

a. Write letters to represent spoken sounds of all letters of the alphabet in random order. (**Mastered/Maintained)**
b. Identify and pronounce all of the dipthongs (e.g., oi, oy, aw, au) and consonant digraphs (e.g., ch, sh, th, wh) accurately in words. (**Mastered/Maintained).**
c. 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)**
d. Identify and pronounce r-controlled vowel patterns in words (e.g., ar, or, er). (**Mastered/Maintained)**
e. 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: Spell words correctly

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 multi-syllable words with roots, prefixes, and suffixes.
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., hundredths, legislative, digestive).

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 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. Determine gradients of meanings between related words and concepts (e.g., ambassador: official, representative).

Objective 0603: Use structural analysis/context clues to determine word 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, metaphors, idioms, proverbs, and clichés.
c. Use context to determine meanings of synonyms, antonyms, homonyms (e.g. ,your, you're), and multiple-meaning words (e.g.,beat).

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, order of importance, time, geographic classification).
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 generated ideas.
c. Identify audience, purpose, and form for writing.
d. Use simple graphic organizers to organize information from multiple sources.

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., sentence length, simple and complex sentences.
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, irregular verbs).
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, cause/ effect reports, compare/contrast essays, observational reports, research reports, content area reports, biographies, historical fiction, summaries).
d. Produce writing to persuade (e.g., essays, editorials, speeches, TV scripts, responses to various media).
e. Produce functional texts (e.g., newspaper and newsletter articles, e-mails, simple PowerPoint presentations, memos, agendas, bulletins).
f. Share writing with others incorporating relevant illustrations, photos, charts, diagrams and/or graphs to add meaning.
g. Publish 6-8 individual products.

Fifth 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.

a. Model, read, and write numerals from hundredths to one million.
b. Write a *whole number* up to 999,999 in *expanded form* (e.g., 876,539 = 8 hundred=thousands, 7 ten=thousands, 6 thousands, 5 hundreds, 3 tens, 9 ones or 8x100,000+7x10,000+6x1,000+5x100+3x10+9).
c. Demonstrate multiple ways to represent whole numbers by using models and symbolic representations (e.g., 108=2x50+8; $108=10^2+8$).
d. Classify whole numbers from 2 to 20 as *prime* or *composite* and 0 and 1 as neither prime nor composite, using models.
e. Represent repeated factors using exponents up to three (e.g., $8=2x2x2=2^3$).

Objective 2: Identify relationships among whole numbers fractions, decimals, and percents.

a. Order and compare *whole numbers*, fractions (including mixed numbers), and decimals using a variety of methods and symbols.
b. Rewrite mixed numbers and improper fractions from one form to the other.
c. Find the least common denominator for two fractions.
d. Represent commonly used fractions as decimals and percents in various ways (e.g., objects, pictures, calculators).

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

a. Identify the *dividend, divisor,* and *quotient* regardless of the division symbol used.
b. Determine whether a whole number is divisible by 2, 3, 5, and/or 10, using the *rules of divisibility.*
c. Represent remainders as *whole numbers*, decimals, or fractions and describe the meaning of remainders as they apply to problems from the students' environment. (e.g., if there are 53 people, how many vans are needed if each van holds 8 people?).
d. Model addition, subtraction, and multiplication of fractions and decimals in a variety of ways (e.g., using objects and a number line).
e. Select or write the number sentences that can be used to solve a two-step problem.
f. Model different strategies for whole number multiplication (e.g., partial product, lattice) and division (e.g., partial quotient).
g. Describe the effect on place value when multiplying and dividing whole numbers and decimals by 10, 100, and 1,000.

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

a. Divide regions, sets of objects, and line segments into equal parts using a variety of models and illustrations.
b. Name and write a fraction to represent a portion of a unit whole for halves, thirds, fourths, fifths, sixths, eights, tenths and twelfths.
c. Represent the simplest form of a fraction in various ways (e.g., objects, pictorial representations, symbols).
d. Represent mixed numbers and improper fractions in various ways (e.g., rulers, objects, number lines, symbols).
e. Rename *whole numbers* as fractions with different denominators (e.g., 5=5/1, 3=6/2, 1=7/7.
f. Model and calculate equivalent forms of a fraction and describe the process used.

Objective 5: Solve problems using the four operations with whole numbers, decimals, and fractions

a. Determine when it is appropriate to use estimation, mental math strategies, paper and pencil, or a calculator.
b. Use estimation strategies to determine whether results obtained using a calculator are reasonable.
c. Multiply up to a three-digit *whole number* by a one or two-digit whole number.
d. Divide up to a three-digit whole number *dividend* by a one-digit *divisor.*
e. Add and subtract decimals with digits to the hundredths place (e.g., 35.42+7.2; 75.2=13.45).
f. Add, subtract, and multiply fractions.
g. Simplify *expressions*, without *exponents* using the *order of operations.*

Objective 6: Model and illustrate integers

a. Identify, read, and locate *integers* on a number line.
b. Describe situations where integers are used in the students' environment.

STANDARD II: Algebra: Students will use patterns and relations to represent and analyze mathematical situations using algebraic symbols.

Objective 1: Recognize, analyze, and use patterns and describe their attitudes

a. Analyze and make predictions about patterns involving *whole numbers*, decimals, and fractions using a variety of tools including organized lists, tables, objects, and variables.
b. Extend patterns and describe a rule for predicting the next element.

Objective 2: Represent, solve, and analyze mathematical situations using algebraic symbols.

a. Recognize a variety of symbols for multiplication and division including x, l, and * as symbols for multiplication and ÷, e, and a fraction bar (/ or -) as division symbols.
b. Recognize that a variable (, n, x) represents an unknown quantity.
c. Solve one-step equations involving *whole numbers* and a single variable (e.g., n÷37=3)
d. Recognize that the answer to a multiplication problem involving a factor of zero (e.g., 0x45=0).
e. Use expressions or one-step equations to represent real world situations.

f. Use the associative *commutative,* and *distributive properties* to compute with whole numbers.

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

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

a. Identify and draw *perpendicular lines.*
b. Draw, label, and describe *rays* and describe an angle as two rays sharing a common endpoint.
c. Label an angle as *acute, obtuse, right,* or *straight.*
d. Identify and describe *equilateral, isosceles, scalene, right, acute,* and *obtuse* triangles.
e. Identify the *vertex* of an angle or the *vertices* of a polygon.
f. Compare *corresponding angles* of two triangles and determine whether the triangles are *similar.*
g. Identify and describe *pyramids* and *prisms.*

Objective 2: Specify locations and describe spatial relationships using coordinate geometry.

a. Locate points defined by ordered pairs in the first *quadrant*.
b. Write an ordered pair for a point in the first quadrant. Specify possible paths between locations on a *coordinate grid* and compare distances of the various paths.

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

a. Identify a *slide (translation*) or *flip* (*reflection*) on a figure across a line.
b. Demonstrate the effect of a *turn (rotation)* on a figure using manipulatives.
c. Relate *pyramids* and *prisms* to the *two-dimensional* shapes *(nets)* from which they were created.

STANDARD IV: Measurement: Students will understand and apply 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, kilometer).
b. Describe the relationship among customary units of weight (i.e., ounce, pound).
c. Identify the correct units of measurement for *volume, area,* and *perimeter* in both metric and customary systems.
d. Estimate length, volume, weight, and area using metric and customary units.
e. Convert units of measurement within the metric system and convert units of measurement within the customary system.

Objective 2: Determine measurement using appropriate tools and formulas.

a. Measure length to the nearest 1/8 of an inch and to the nearest centimeter.
b. Measure *volume* and weight using *metric* and *customary* units.
c. Measure angles with a protractor.
d. Calculate *elapsed time* within a.m. or p.m. time periods.
e. Read and record the temperature to the nearest degree (above and below zero) when using a thermometer with a Celsius or Fahrenheit scale.
f. Calculate the *perimeter* of rectangles and triangles.
g. Calculate the *area* of squares and rectangles using a formula.

STANDARD V: Data Analysis and Probability: Students will collect , analyze, and draw conclusions from data conclusions from data and apply basic concepts of probability.

Objective 1: Formulate and answer questions using statistical methods to compare data.

a. Formulate questions that can be answered by collecting data.
b. Collect, compare, and display data using an appropriate format (i.e., *line plots,* bar graphs, pictographs, *circle* graphs, line graphs.
c. Identify *minimum* and *maximum* values for a set of data.
d. Identify or calculate the *mean, mode,* and *range.*
e. Propose and justify inferences based on data.

Objective 2: Apply basic concepts of probability.

a. Describe the results of investigations involving random outcomes using a variety of notations (e.g., 4 out of 9, 4/9, 4:9)
b. Recognize that outcomes of experiments and samples are fractions between 0 and 1.
c. Predict the probability of an outcome in a simple experiment.