Tennessee English Language Arts Standards

Grade 5

Standard 1—Language

Conceptual Strand 1
Standard American English conventions and vocabulary are essential to effective communication and to success in college classrooms and workplaces.

Guiding Question 1
How does language usage reflect mastery of Standard American English and its conventions?

Grade Level Expectations

GLE 0501.1.1 Demonstrate knowledge of Standard English usage, mechanics, and spelling.

GLE 0501.1.2 Demonstrate knowledge of strategies and resources to determine the definition, pronunciation, and usage of words and phrases.

GLE 0501.1.3 Demonstrate knowledge of Standard English sentence structure.

Checks for Understanding (Formative/Summative Assessment)

- ✓ **0501.1.1** Know and use appropriately the meaning, forms, and functions of the eight parts of speech (i.e., nouns, pronouns, verbs, adverbs, adjectives, prepositions, conjunctions, and interjections).

- ✓ **0501.1.2** Recognize usage errors (e.g., double negatives, troublesome words: affect/effect, sit/set, lie/lay, may/can, leave/let, teach/learn).

- ✓ **0501.1.3** Recognize and appreciate cultural and regional differences signaled by word usage and vocabulary.

- ✓ **0501.1.4** Capitalize correctly sentence beginnings, proper nouns and adjectives, titles, abbreviations, quotations, parts of friendly letters and business letters.

- ✓ **0501.1.5** Use correct end of sentence punctuation (e.g., period, question mark).

- ✓ **0501.1.6** Demonstrate knowledge of the meaning and function of certain marks of punctuation, including colons, semi-colons, apostrophes, quotation marks, and commas used in these ways: direct address, items in a series, following introductory words, in dates and addresses, quotations, parts of a letter, before coordinating conjunctions in compound sentences.

- ✓ **0501.1.7** Demonstrate the correct use of quotation marks in conversation, including their use with capitalization, end marks, and explanatory material.

- ✓ **0501.1.8** Apply correct orthographic conventions, including spelling, contractions and possessives, and letter formation in cursive writing.

- ✓ **0501.1.9** Use appropriate language structure in oral and written communication (e.g., subject-verb agreement in simple and compound sentences, correct syntax, correct placement of modifiers).

- ✓ **0501.1.10** Recognize incomplete sentences and run-on sentences and edit appropriately.

- ✓ **0501.1.11** Eliminate reliance on simple sentences by combining independent classes, by creating compound subjects and/or predicates, by using introductory phrases or clauses, or by appropriate use of a semi-colon.

State Performance Indicators

SPI 0501.1.1 Recognize usage errors occurring within context (e.g., double negatives, troublesome words: to/too/two, their/there/they're, lie/lay, sit/set, leave/let, learn/teach).

SPI 0501.1.2 Identify the correct use of nouns (i.e., singular/plural, possessives, predicate nouns, nouns as objects), pronouns (i.e., agreement, subject, object), verbs (i.e., action/linking, regular/irregular, agreement, tenses), adjectives (i.e., common/proper, comparative forms, predicate adjectives), and adverbs (i.e., comparative forms, negatives) within context.

SPI 0501.1.3 Identify sentences with correct use of commas (i.e., series, dates, addresses, friendly letters, compound sentences, coordinating conjunctions, and introductory words) and of colons within context.

SPI 0501.1.4 Choose the correct use of quotation marks and commas in direct quotations.

SPI 0501.1.5 Identify correctly or incorrectly spelled words in context, including the correct spelling of plurals and possessives.

SPI 0501.1.6 Identify within context a variety of appropriate sentence-combining techniques (i.e., comma+ coordinating conjunction, use of semicolon, introductory phrases and/or clauses).

SPI 0501.1.7 Select the most appropriate method to correct a run-on sentence (i.e., conjunctions, semicolons, periods to join or separate elements) within context.

SPI 0501.1.8 Select the best way to correct incomplete sentences within context.

Standard 2—Communication

Conceptual Strand 2
Effective communication through clear and persuasive expression and attentive listening is necessary for success in school, the workplace, and in the larger community.

Guiding Question 2
What communication skills are essential to achieve success in school, the workplace, and in leisurely pursuits?

Grade Level Expectations

GLE 0501.2.1 Continue to develop critical listening skills necessary for comprehension and task completion.

GLE 0501.2.2 Identify the organizational structure of a speech.

GLE 0501.2.3 Continue to develop strategies for expressing thoughts and ideas clearly and effectively.

GLE 0501.2.4 Participate in work teams and group discussions.

Checks for Understanding (Formative/Summative Assessment)

Listening
- ✓ **0501.2.1** Listen attentively by facing the speaker, asking questions, and paraphrasing what is said.
- ✓ **0501.2.2** Use established rules for polite conversation (e.g., do not interrupt, face the speaker, listen attentively, provide appropriate feedback, take turns, raise hands).
- ✓ **0501.2.3** Give multi-step directions (e.g., tell someone how to make a simple recipe).
- ✓ **0501.2.4** Formulate and respond to questions from teachers and group members.
- ✓ **0501.2.5** Identify the targeted audience and purpose for a speech.

Speaking
- ✓ **0501.2.5** Participate in creative and expressive responses to text (e.g., choral reading, discussion, dramatization, oral presentations, and personal experiences).
- ✓ **0501.2.6** Use different voice levels and speech patterns in formal and informal situations.
- ✓ **0501.2.7** Participate in recitations of assigned/self-selected passages.
- ✓ **0501.2.8** Create and deliver an oral presentation using visual aids or props.

✓ **0501.2.10** Identify the organizational pattern of a speech.

State Performance Indicators

SPI 0501.2.1 Identify the audience for a given speech.

SPI 0501.2.2 Identify the organizational pattern of a speech.

SPI 0501.2.3 Determine the roles of participants in group discussions and problem-**solving** teams.

SPI 0501.2.4 Organize a set of note cards in the most effective order for an oral presentation.

Standard 3—Writing

Conceptual Strand 3
The ability to write clearly and coherently for a variety of purposes to a variety of audiences is vital to individual success.

Guiding Question 3
How will students demonstrate their ability to write effectively for a variety of purposes and audiences?

Grade Level Expectations

GLE 0501.3.1 Write for a variety of purposes and to a variety of audiences**.**

GLE 0501.3.2 Write in a variety of modes and genres, including narration, literary response, personal expression, description, and imaginative

GLE 0501.3.3 Know and apply the steps of the writing process: prewriting, drafting, revising, editing, evaluating, and publishing.

GLE 0501.3.4 Write frequently across content areas.

Checks for Understanding (Formative/Summative Assessment)

✓ **0501.3.1** Practice writing to narrative and descriptive prompts within a specified time.

✓ **0501.3.2** Generate ideas for writing, taking into consideration audience and purpose.

✓ **0501.3.3** Use a variety of prewriting strategies.

✓ **0501.3.4** Recognize and use all steps in the writing process: prewriting, drafting, revising, editing/proofing, publishing.

- ✓ **0501.3.5** Compare and contrast two persons, places, things, or ideas.

- ✓ **0501.3.6** Make written responses to literature studied (e.g., critique, journal, group project).

- ✓ **0501.3.7** Create a well-developed story or passage summary, as well as personal reflections and imaginative writing samples.

- ✓ **0501.3.8** Compose clear, coherent, well-organized multi-paragraphed works.

- ✓ **0501.3.9** Conduct timed writings to narrative prompts.

- ✓ **0501.3.10** Demonstrate confidence and competence in using the Tennessee Writing Assessment rubric while evaluating one's own writing and the writing of others.

- ✓ **0501.3.11** Compose and respond in writing to original questions and/or problems from all content areas.

- ✓ **0501.3.12** Use appropriate time-order or transitional words and phrases.

- ✓ **0501.3.13** Use correct page format (e.g., paragraphs, margins, indentations, title).

- ✓ **0501.3.14** Introduce writing in the expository mode.

State Performance Indicators

*****The Tennessee State Writing Assessment is administered for the first time at Grade 5. Students are asked to complete a timed writing to a narrative prompt. These compositions are evaluated using the Tennessee State Rubric.**
This assessment, along with those administered at grades 8 and 11, constitute the primary assessments of students' writing proficiency.

SPI 0501.3.1 Complete a graphic organizer (i.e., clustering, listing, mapping, webbing) to group ideas for writing.

SPI 0501.3.2 Rearrange sentences to form a sequential, coherent paragraph.

SPI 0501.3.3 Identify the purpose for writing (i.e., to entertain, to inform, to report).

SPI 0501.3.4 Identify the audience for which a text is written.

SPI 0501.3.5 Select details that support a topic sentence.

SPI 0501.3.6 Incorporate vivid and active words into a writing sample.

SPI 0501.3.7 Develop and write a paragraph topic sentence with supporting details.

SPI 0501.3.8 Rearrange paragraphs in a narrative writing selection in sequential and chronological order.

SPI 0501.3.9 Select appropriate time-order or transitional words/phrases to enhance the flow of a writing sample.

SPI 0501.3.10 Select the best way to combine sentences to provide syntactic variety within context.

SPI 0501.3.11 Select the best title for a written selection.

SPI 0501.3.12 Choose the supporting sentence that best fits the context and flow of ideas in a paragraph.

SPI 0501.3.13 Supply a piece of missing information in an outline.

SPI 0501.3.14 Select, limit, and refine a writing topic.

Standard 4—Research

Conceptual Strand 4
Effective researchers have the ability to frame, analyze, and solve problems, while building on and evaluating the credibility of existing research.

Guiding Question 4
How can students develop the ability to find and incorporate reliable, valid research materials into their original work and give appropriate credit to sources?

Grade Level Expectations

GLE 0501.4.1 Conduct research to access and present information.

GLE 0501.4.2 Collect, organize, determine reliability, and use information researched.

GLE 0501.4.3 Present the research results in a written paper, citing the resources used.

Checks for Understanding (Formative/Summative Assessment)

- ✓ **0501.4.1** Define and narrow a topic for research.
- ✓ **0501.4.2** Use current technology as a research and communication tool for personal interest, research, and clarification.
- ✓ **0501.4.3** Gather and record information on a research topic using three different sources, at least one of which must be a print source.

- ✓ **0501.4.4** Evaluate and determine the reliability of sources on a given topic.

- ✓ **0501.4.5** Organize information from text or technological sources using a graphic organizer.

- ✓ **0501.4.6** Write a research report, using four or more sources and notes taken from those sources citing appropriate bibliographical materials.

- ✓ **0501.4.7** Learn proper citation forms for texts and for Internet sources.

- ✓ **0501.4.8** Discern and use appropriate reference sources in various format (e.g., interviews with family and community; encyclopedia, card/electronic catalogs, almanacs, magazines, newspapers).

- ✓ **0501.4.9** Develop notes that include important concepts, paraphrases, summaries, and identification of reference sources.

State Performance Indicators

SPI 0501.4.1 Identify the most reliable information sources available for preparing a research report.

SPI 0501.4.2 Develop a note-taking system or some other method of effective information collection.

SPI 0501.4.3 Complete a graphic organizer (e.g., chart, web) organizing material collected from text or technological sources.

SPI 0501.4.4 From a list of citations, choose the properly written one.

SPI 0501.4.5 Submit a composition setting forth the results of the research and using appropriate citations.

Standard 5—Logic

Conceptual Strand 5
Logic develops the skills of reasoning soundly, thinking critically, arguing persuasively, and inferring appropriately.

Guiding Question 5
How can students develop and demonstrate the ability to apply logic in a sound and systematic way?

Grade Level Expectations

GLE 0501.4.1 Refine logic skills to facilitate learning and to enhance thoughtful reasoning.

GLE 0501.4.2 Use logic to make inferences and to draw appropriate conclusions.

GLE 0501.4.3 Recognize false premises and faulty logic in advertising.

GLE 0501.4.3 Begin to develop analogical reasoning.

Checks for Understanding (Formative/Summative Assessment)

- ✓ **0501.5.1** Distinguish fact from opinion and cause from effect.
- ✓ **0501 5.2** Draw inferences while reading, viewing, or listening to print and non-print media.
- ✓ **0501.5.3** Make and adjust predictions while reading, viewing, or listening to print and non-print media.
- ✓ **0501.5.4** Draw conclusions while reading, viewing, or listening to print and non-print media.
- ✓ **0501.5.5** Construct and complete analogies.

State Performance Indicators

SPI 0501.5.1 Locate information to support opinions, predictions, and conclusions.

SPI 0501.5.2 Identify stated or implied cause and effect relationships in text.

SPI 0501.5.3 Distinguish between fact and opinion in text.

SPI 0501.5.4 Evaluate texts for elements of reality and fantasy.

SPI 0501.5.5 Determine the conflict in a text and recognize its solution.

SPI 0501.5.6 Select a logical word to complete an analogy using synonyms and antonyms and categories and subcategories.

SPI 0501.5.7 Determine appropriate inferences and draw conclusions from text.

SPI 0501.5.8 Make predictions about text.

SPI 0501.5.9 Indicate the correct sequence of events in text.

SPI 0501.5.10 Identify the techniques of propaganda (i.e., bandwagon, loaded words, testimonials).

Standard 6—Informational Text

Conceptual Strand 6
Most texts are informational in nature and require a comprehensive set of skills different from those needed for recreational reading.

Guiding Question 6
What specific strategies and skills are required in order to understand and interpret various informational texts?

Grade Level Expectations

GLE 0501.6.1 Apply appropriate skills and strategies to comprehend informational text (e.g., prereading strategies, comprehension strategies, graphic organizers, questioning text).

GLE 0501.6.2 Recognize the different text features of informational text (e.g., separate text boxes, diagrams, captions, charts, graphs).

GLE 0501.6.3 Follow multi-tasked instructions in informational and technical texts (e.g., follow a recipe, complete assembly instructions).

GLE 0501.6.4 Follow the organizational structure of informational/technical text.

Checks for Understanding (Formative/Summative Assessment)

- ✓ **0501.6.1** Set a purpose for reading (e.g., to understand, to enjoy, to solve problems, to locate specific information/facts).

- ✓ **0501.6.2** Use common text parts and features to enhance understanding (e.g., headings, key words, graphics, captions, side bars, chapter titles, glossaries).

- ✓ **0501.6.3** Understand sequence of events from text.

- ✓ **0501.6.4** Determine the main idea and supporting details from text.

- ✓ **0501.6.5** Skim text to develop a general overview of content or to locate specific information.

- ✓ **0501.6.6** Understand a variety of informational texts, which include primary sources (e.g., autobiographical sketches, letters, diaries, Internet sites).

State Performance Indicators

SPI 0501.6.1 Use headings, graphics, captions, glossaries, and chapter titles to make meaning from text.

SPI 0501.6.2 Interpret information using a chart, map, or timeline.

SPI 0501.6.3 Identify the stated main idea and supporting details in text.

Standard 7—Media

Conceptual Strand 7
An ability to understand and analyze media and technology will be vital, ongoing life skills.

Guiding Question 7*What strategies will help students become thoughtful users of information coming from a wide variety of media?*

Grade Level Expectations

GLE 0501.7.1 Recognize that media can provide sources of information and entertainment.

GLE 0501.7.2 Use media to publish and present information.

GLE 0501.7.3 Understand that the choice of medium influences the message in a presentation.

GLE 0501.7.4 Be aware of how message or meaning changes when a written work is translated into a visual presentation.

Checks for Understanding (Formative/Summative Assessment)

- ✓ **0501.7.1** Use media (e.g., photographs, films, videos, the arts, online catalogs, nonfictions books, encyclopedias, CD-ROM references, Internet) to view, read, and represent information.

- ✓ **0501.7.2** Use print and non-print materials along with prior knowledge to provide background for writing and/or presenting.

- ✓ **0501.7.3** Use media to conduct research and prepare reports.

- ✓ **0501.7.4** Use libraries/media centers to access media sources.

- ✓ **0501.7.5** Use media to enhance reports and oral presentations.

- ✓ **0501.7.6** Examine the effects of media (e.g., television, print materials, Internet, magazines) on daily life.

State Performance Indicators

SPI 0501.7.1 Select the most appropriate medium or media for accessing information, writing a report, or making a presentation.

SPI 0501.7.2 Determine the main idea in a visual image.

SPI 0501.7.3 Use appropriate media to enhance an oral presentation.

Standard 8—Literature

Conceptual Strand 8
Educated members of adult society gain knowledge of themselves and others through the study of literature, thus becoming critical readers and lifelong members of literacy communities.

Guiding Question 8
What skills and strategies are necessary for students to understand literary text and to make appropriate connections among themselves, the text, and the human community?

Grade Level Expectations

GLE 0501.8.1 Use previously learned comprehension strategies before, during, and after reading.

GLE 0501.8.2 Experience various literary genres, including fiction and nonfiction, poetry, drama, chapter books, biography/autobiography, short stories, folk tales, myths, science fiction).

GLE 0501.8.3 Understand the basic characteristics of the genres studied.

GLE 0501.8.4 Understand the meaning of plot, character, setting, point of view, and theme in narration.

GLE 0501.8.5 Know and understand basic terms used in poetry (e.g., rhythm, rhyme, metaphor, simile, personifications, onomatopoeia).

GLE 0501.8.6 Recognize elements peculiar to dramatic literature (e.g., time constraints, organizational structure, dialogue).

GLE 0501.8.7 Consider literature selections as reflections of the culture in which they were written.

Checks for Understanding (Formative/Summative Assessment)

- ✓ **0501.8.1** Decode unknown words utilizing learned strategies.
- ✓ **0501.8.2** Recognize various literary genres and their characteristics.
- ✓ **0501.8.3** Predict outcomes and adjust as additional information is acquired.
- ✓ **0501.8.4** Organize prior knowledge using a variety of strategies (e.g., webbing, mapping, and brainstorming).
- ✓ **0501.8.5** Build vocabulary by reading from a wide variety of texts and literary genres.

- ✓ **0501.8.6** Use metacognitive and self-monitoring strategies to improve comprehension (e.g., rereading, identifying miscues, reading ahead, drawing on earlier reading).

- ✓ **0501.8.7** Participate in creative responses to text.

- ✓ **0501.8.8** Discuss similarities and differences in events and/or characters, using evidence cited in two or more texts.

- ✓ **0501.8.9** Identify how culture, ethnicity, and historical eras are represented in literary text.

- ✓ **0501.8.10** Make inferences and recognize unstated assumptions.

- ✓ **0501.8.11** Make connections among various texts showing similarities and differences.

- ✓ **0501.8.12** Understand figurative language in context (i.e., similes, metaphors, personification, hyperbole).

- ✓ **0501.8.13** Understand the effect of sound within context (e.g., onomatopoeia, alliteration, rhyme, repetition).

- ✓ **0501.8.14** Analyze the plot structure of a narrative (story) including identifying the problem (conflict) and determining how the problem is resolved.

State Performance Indicators

SPI 0501.8.1 Identify setting, characters, plot, and theme.

SPI 0501.8.2 Select questions used to focus and clarify thinking before, during, and after reading text.

SPI 0501.8.3 Determine word meanings within context.

SPI 0501.8.4 Identify the sequence of events in fiction selections.

SPI 0501.8.5 Select stated or implied main idea and supporting details from fiction selections.

SPI 0501.8.6 Identify stated or implied cause and effect relationships in fiction selections.

SPI 0501.8.7 Select the appropriate summary statement for a given passage.

SPI 0501.8.8 Recognize reasonable predictions of future events within a given context.

SPI 0501.8.9 Distinguish among various literary genres (e.g., poetry, drama, letters, ads, historical fiction, biographies, autobiographies).

SPI 0501.8.10 Identify and interpret the main incidents of a plot, their causes, how they influence future actions, and how they are resolved.

SPI 0501.8.11 Demonstrate knowledge of the difference between first person and third person point of view in writing.

SPI 0501.8.12 Determine whether the theme is stated or implied within a passage.

SPI 0501.8.13 Identify similes, metaphors, personification, and hyperbole in context.

SPI 0501.8.14 Identify the effect of sound within context (e.g., onomatopoeia, alliteration, rhyme, repetition).

Tennessee Mathematics Standards
2009-2010 Implementation

Grade Five Mathematics

Standard 1 – Mathematical Processes

Grade Level Expectations:

GLE 0506.1.1	Use mathematical language, symbols, and definitions while developing mathematical reasoning.
GLE 0506.1.2	Apply and adapt a variety of appropriate strategies to problem solving, including estimation, and reasonableness of the solution.
GLE 0506.1.3	Develop independent reasoning to communicate mathematical ideas and derive algorithms and/or formulas.
GLE 0506.1.4	Move flexibly between concrete and abstract representations of mathematical ideas in order to solve problems, model mathematical ideas, and communicate solution strategies.
GLE 0506.1.5	Use mathematical ideas and processes in different settings to formulate patterns, analyze graphs, set up and solve problems and interpret solutions.
GLE 0506.1.6	Read and interpret the language of mathematics and use written/oral communication to express mathematical ideas precisely.
GLE 0506.1.7	Recognize the historical development of mathematics, mathematics in context, and the connections between mathematics and the real world.
GLE 0506.1.8	Use technologies/manipulatives appropriately to develop understanding of mathematical algorithms, to facilitate problem solving, and to create accurate and reliable models of mathematical concepts.

Checks for Understanding (Formative/Summative Assessment):

✓	0506.1.1	Make and test conjectures about geometric properties and develop logical arguments to justify conclusions.
✓	0506.1.2	Make reasonable estimates of fraction and decimal sums or differences using models.
✓	0506.1.3	Explore different methods of estimation including rounding and truncating.
✓	0506.1.4	Explore problems in different contexts to interpret the meaning of remainders as discrete values or not.
✓	0506.1.5	Solve problems in more than one way and explain why one process may be more effective than another.
✓	0506.1.6	Communicate answers in correct verbal and numerical form; including use of mixed numbers or fractions and use of units.
✓	0506.1.7	Organize and consolidate verbal statements involving fractions and mixed numbers into diagrams, symbols, and numerical expressions.
✓	0506.1.8	Use patterns, models, and relationships as contexts for writing inequalities and simple equations.
✓	0506.1.9	Use age-appropriate books, stories, and videos to convey ideas of mathematics.

State Performance Indicators:

SPI 0506.1.1	Given a series of geometric statements, draw a conclusion about the figure described.
SPI 0506.1.2	Estimate fraction and decimal sums or differences.

SPI 0506.1.3 Recognize the unit associated with the remainder in a division problem or the meaning of the fractional part of a whole given in either decimal or fraction form.

SPI 0506.1.4 Identify missing information and/or too much information in contextual problems.

Standard 2 - Number and Operations

Grade Level Expectations:

GLE 0506.2.1 Extend the understanding of place value through millions and millionths in various contexts and representations.

GLE 0506.2.2 Write natural numbers (to 50) as a product of prime factors and understand that this is unique (apart from order).

GLE 0506.2.3 Develop fluency with division of whole numbers. Understand the relationship of divisor, dividend, and quotient in terms of multiplication and division.

GLE 0506.2.4 Develop fluency with addition and subtraction of proper and improper fractions and mixed numbers; explain and model the algorithm.

GLE 0506.2.5 Develop fluency in solving multi-step problems using whole numbers, fractions, mixed numbers, and decimals.

Checks for Understanding (Formative/Summative Assessment):

- ✓ 0506.2.1 Identify prime numbers up to 50.
- ✓ 0506.2.2 Use the prime factorization of two whole numbers to determine the greatest common factor and the least common multiple.
- ✓ 0506.2.3 Use visual models, benchmarks, and equivalent forms to add and subtract commonly used fractions and decimals.
- ✓ 0506.2.4 Use divisibility rules to factor numbers.
- ✓ 0506.2.5 Make reasonable estimates of fraction and decimal sums and differences.
- ✓ 0506.2.6 Add and subtract mixed numbers.
- ✓ 0506.2.7 Understand the placement of the decimal point in calculations of multiplication and long division, including the placement in the estimation of the answer.
- ✓ 0506.2.8 Understand that division by zero is undefined.
- ✓ 0506.2.9 Explore numbers less than 0 by extending the number line through familiar applications (e.g., temperatures below zero, owing money, measuring elevation below sea level).
- ✓ 0506.2.10 Use exponential notation to represent repeated multiplication of whole numbers.

State Performance Indicators:

SPI 0506.2.1 Read and write numbers from millions to millionths in various contexts.

SPI 0506.2.2 Write the prime factorization of numbers through 50 using both exponential and standard notation.

SPI 0506.2.3 Select a reasonable solution to a real-world division problem in which the remainder must be considered.

SPI 0506.2.4 Solve problems involving the division of two- and three-digit whole numbers by one- and two-digit whole numbers.

SPI 0506.2.5 Solve addition and subtraction problems involving both fractions and decimals.

SPI 0506.2.6 Add and subtract proper and improper fractions as well as mixed numbers.

SPI 0506.2.7 Recognize equivalent representations for the same number.

SPI 0506.2.8 Write terminating decimals in the form of fractions or mixed numbers.

SPI 0506.2.9 Compare whole numbers, decimals and fractions using the symbols <, >, and =.

Standard 3 – Algebra

Grade Level Expectations:

GLE 0506.3.1 Understand and use order of operations.
GLE 0506.3.2 Develop and apply the concept of variable.
GLE 0506.3.3 Understand and apply the substitution property.
GLE 0506.3.4 Solve single-step linear equations and inequalities.

Checks for Understanding (Formative/Summative Assessment):

- ✓ 0506.3.1 Evaluate an expression by substituting non-negative rational number values for letter variables in the expression.
- ✓ 0506.3.2 Use variables appropriately to represent numbers whose values are not yet known.
- ✓ 0506.3.3 Solve single-step linear equations using inverse operations.
- ✓ 0506.3.4 Solve single-step linear inequalities and graph solutions on a number line.
- ✓ 0506.3.5 Determine if a given value is a solution to a linear equation/inequality.
- ✓ 0506.3.6 Recognize there are many numbers between any two whole numbers on the number line.

State Performance Indicators:

SPI 0506.3.1 Evaluate algebraic expressions involving decimals and fractions using order of operations.
SPI 0506.3.2 Evaluate multi-step numerical expressions involving fractions using order of operations.
SPI 0506.3.3 Find the unknown in single-step equations involving fractions and mixed numbers.
SPI 0506.3.4 Given a set of values, identify those that make an inequality a true statement.

Standard 4 – Geometry and Measurement

Grade Level Expectations:

GLE 0506.4.1 Use basic formulas and visualization to find the area of geometric figures.
GLE 0506.4.2 Describe polyhedral solids and analyze their properties, including volume and surface area.
GLE 0506.4.3 Describe length/distance relationships using the first quadrant of the coordinate system.
GLE 0506.4.4 Solve problems that require attention to both approximation and precision of measurement.

Checks for Understanding (Formative/Summative Assessment):

- ✓ 0506.4.1 Develop the formula for the area of a triangle as it relates to the area of a parallelogram/rectangle.
- ✓ 0506.4.2 Find the area of a convex polygon by decomposing it into triangles/rectangles.
- ✓ 0506.4.3 Build, draw, and work with prisms by means of orthogonal views, projective views, and nets.
- ✓ 0506.4.4 Describe and identify the five regular (Platonic) solids and their properties with respect to faces, shapes of faces, edges, and vertices.
- ✓ 0506.4.5 Quantify total volume as filling space with same-sized units of volume without gaps or overlap.
- ✓ 0506.4.6 Decompose prisms to calculate surface area and volume.
- ✓ 0506.4.7 Understand, select and use units of appropriate size and type to measure angles, lengths/distances, area, surface area and volume.

- ✓ 0506.4.8 Identify characteristics of the set of points that define vertical and horizontal line segments.
- ✓ 0506.4.9 Correctly interpret significant digits in the accuracy of measurements and associated calculations.
- ✓ 0506.4.10 Recognize that measurements are never exact.
- ✓ 0506.4.11 Understand the usefulness of approximations.
- ✓ 0506.4.12 Develop strategies for choosing correct tools of measurement.
- ✓ 0506.4.13 Recognize and use measures of weight and temperature.

State Performance Indicators:

SPI 0506.4.1 Solve contextual problems that require calculating the area of triangles and parallelograms.

SPI 0506.4.2 Decompose irregular shapes to find perimeter and area.

SPI 0506.4.3 Identify a three-dimensional object from two-dimensional representations of that object and vice versa.

SPI 0506.4.4 Solve problems involving surface area and volume of rectangular prisms and polyhedral solids.

SPI 0506.4.5 Find the length of vertical or horizontal line segments in the first quadrant of the coordinate system, including problems that require the use of fractions and decimals.

SPI 0506.4.6 Record measurements in context to reasonable degree of accuracy using decimals and/or fractions.

Standard 5 – Data, Probability and Statistics

Grade Level Expectations:

GLE 0506.5.1 Make, record, display and interpret data and graphs that include whole numbers, decimals, and fractions.

GLE 0506.5.2 Describe the shape and important features of a set of data using the measures of central tendency.

Checks for Understanding (Formative/Summative Assessment):

- ✓ 0506.5.1 Construct and analyze double bar and line graphs.
- ✓ 0506.5.2 Represent data using ordered pairs in the first quadrant of the coordinate system.
- ✓ 0506.5.3 Design investigations to address a question and consider how data collection methods affect the nature of the data set.
- ✓ 0506.5.4 Recognize the differences in representing categorical and numerical data.
- ✓ 0506.5.5 Evaluate how different measures of central tendency describe data.
- ✓ 0506.5.6 Identify outliers and determine their effect on mean, median, mode and range.

State Performance Indicators:

SPI 0506.5.1 Depict data using various representations, including decimal and/or fractional data.

SPI 0506.5.2 Make predictions based on various data representations, including double bar and line graphs.

SPI 0506.5.3 Calculate measures of central tendency to analyze data.

Tennessee Science Standards

Grade 5 : Inquiry

Conceptual Strand

Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.

Guiding Question

What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry?

Grade Level Expectations	Checks for Understanding	State Performance Indicators
GLE 0507.Inq.1 Explore different scientific phenomena by asking questions, making logical predictions, planning investigations, and recording data. **GLE 0507.Inq.2** Select and use appropriate tools and simple equipment to conduct an investigation. **GLE 0507.Inq.3** Organize data into appropriate tables, graphs, drawings, or diagrams. **GLE 0507.Inq.4** Identify and interpret simple patterns of evidence to communicate the findings of multiple investigations. **GLE 0507.Inq.5** Recognize that people may interpret the same results in different ways.	✓**0507.Inq.1** Identify specific investigations that could be used to answer a particular question and identify reasons for this choice. ✓**0507.Inq.2** Identify tools needed to investigate specific questions. ✓**0507.Inq.3** Maintain a science notebook that includes observations, data, diagrams, and explanations. ✓**0507.Inq.4** Analyze and communicate findings from multiple investigations of similar phenomena to reach a conclusion.	**SPI 0507.Inq.**1 Select an investigation that could be used to answer a specific question.

GLE 0507.Inq.6 Compare the results of an investigation with what scientists already accept about this question.		

Grade 5 : Technology & Engineering

Conceptual Strand

Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.

Guiding Question

How do science concepts, engineering skills, and applications of technology improve the quality of life?

Grade Level Expectations	Checks for Understanding	State Performance Indicators
GLE 0507.T/E.1 Describe how tools, technology, and inventions help to answer questions and solve problems.	✓**0507.T/E.1** Explain how different inventions and technologies impact people and other living organisms.	**SPI 0507.T/E.1** Select a tool, technology, or invention that was used to solve a human problem.
GLE 0507.T/E.2 Recognize that new tools, technology, and inventions are always being developed.	✓**0507.T/E.2** Design a tool or a process that addresses an identified problem caused by human activity.	**SPI 0507.T/E.2** Recognize the connection between a scientific advance and the development of a new tool or technology.
GLE 0507.T/E.3 Identify appropriate materials, tools, and machines that can extend or enhance the ability to solve a specified problem.	✓**0507.T/E.3** Determine criteria to evaluate the effectiveness of a solution to a specified problem.	
GLE 0507.T/E.4 Recognize the connection between scientific advances, new knowledge, and the availability of new tools and	✓**0507.T/E.4** Evaluate an invention that solves a problem and determine ways to improve the design.	

technologies. **GLE 0507.T/E.5** Apply a creative design strategy to solve a particular problem generated by societal needs and wants.		

Grade 5 - Life Science

Grade 5 : Standard 1 - Cells

Conceptual Strand 1

All living things are made of cells that perform functions necessary for life.

Guiding Question 1

How are plant and animals cells organized to carry on the processes of life?

Grade Level Expectations	Checks for Understanding	State Performance Indicators
GLE 0507.1.1 Distinguish between the basic structures and functions of plant and animal cells.	✓**0507.1.1** Label drawings of plant and animals cells. ✓**0507.1.2** Compare and contrast the basic structures and functions of plant and animal cells.	**SPI 0507.1.1** Identify the major parts of plant and animal cells such as, the nucleus, cell membrane, cell wall, and cytoplasm. **SPI 0507.1.2** Compare and contrast basic structures and functions of plant and animal cells.

Grade 5 : Standard 2 - Interdependence

Conceptual Strand 2

All life is interdependent and interacts with the environment.

Guiding Question 2

How do living things interact with one another and with the non-living elements of their environment?

Grade Level Expectations	Checks for Understanding	State Performance Indicators
GLE 0507.2.1 Investigate different nutritional relationships among organisms in an ecosystem. **GLE 0507.2.2** Explain how organisms interact through symbiotic, commensal, and parasitic relationships. **GLE 0507.2.3** Establish the connections between human activities and natural disasters and their impact on the environment.	✓**0507.2.1** Evaluate producer/consumer, predator/prey, and parasite/host relationships. ✓**0507.2.2** Classify interspecific relationships within an ecosystem as mutualism, commensalism, or parasitism. ✓**0507.2.3** Create a simple model illustrating the interspecific relationships within an ecosystem. ✓**0507.2.4** Analyze basic information from a body of text to identify key issues or assumptions about the relationships among organisms in an ecosystem. ✓**0507.2.5** Create a poster to illustrate how human activities and natural disasters affect the environment.	**SPI 0507.2.1** Describe the different types of nutritional relationships that exist among organisms. **SPI 0507.2.2** Distinguish among symbiotic, commensal, and parasitic relationships. **SPI 0507.2.3** Use information about the impact of human actions or natural disasters on the environment to support a simple hypothesis, make a prediction, or draw a conclusion.

Grade 5 : Standard 3 - Flow of Matter and Energy

Conceptual Strand 3

Matter and energy flow through the biosphere.

Guiding Question 3

What scientific information explains how matter and energy flow through the biosphere?

Grade Level Expectations	Checks for Understanding	State Performance Indicators
GLE 0507.3.1 Demonstrate how all living things rely on the process of photosynthesis to obtain energy.	✓**0507.3.1** Identify the cell structures that enable plants to conduct photosynthesis. ✓**0507.3.2** Design a graphic organizer that illustrates the difference between plants and animals in the movement of food energy through an ecosystem.	**SPI 0507.3.1** Identify photosynthesis as the food manufacturing process in plants. **SPI 0507.3.2** Compare how plants and animals obtain energy.

Grade 5 : Standard 4 - Heredity

Conceptual Strand 4

Plants and animals reproduce and transmit hereditary information between generations.

Guiding Question 4

What are the principal mechanisms by which living things reproduce and transmit information between parents and offspring?

Grade Level Expectations	Checks for Understanding	State Performance Indicators
GLE 0507.4.1 Describe how genetic information is passed from parents to offspring during reproduction. **GLE 0507.4.2** Recognize that some characteristics are inherited while others result from interactions with the environment.	✓**0507.4.1** Explain how genetic information is transmitted from parents to offspring. ✓**0507.4.2** Create a chart that compares hereditary and environmental traits. ✓**0507.4.3** Distinguish between a scar and a birthmark in terms of their origins.	**SPI 0507.4.1** Recognize that information is passed from parent to offspring during reproduction. **SPI 0507.4.2** Distinguish between inherited traits and those that can be attributed to the environment.

Grade 5 : Standard 5 - Biodiversity and Change

Conceptual Strand 5

A rich variety of complex organisms have developed in response to a continually changing environment.

Guiding Question 5

How does natural selection explain how organisms have changed over time?

Grade Level Expectations	Checks for Understanding	State Performance Indicators

GLE 0507.5.1 Investigate physical characteristics associated with different groups of animals. **GLE 0507.5.2** Analyze fossils to demonstrate the connection between organisms and environments that existed in the past and those that currently exist.	✓**0507.5.1** Classify animals according to their physical characteristics. ✓**0507.5.2** Design a model to illustrate how an animal's physical characteristics enable it to survive in a particular environment. ✓**0507.5.3** Identify the processes associated with fossil formation. ✓**0507.5.4** Use fossil evidence to describe an environment from the past. ✓**0507.5.5** Use fossils to match a previously existing organism with one that exists today.	**SPI 0507.5.1** Identify physical and behavioral adaptations that enable animals such as, amphibians, reptiles, birds, fish, and mammals to survive in a particular environment. **SPI 0507.5.2** Explain how fossils provide information about the past.

Grade 5 - Earth and Space Science

Grade 5 : Standard 6 - The Universe

Conceptual Strand 6

The cosmos is vast and explored well enough to know its basic structure and operational principles.

Guiding Question 6

What big ideas guide human understanding about the origin and structure of the universe, Earth's place in the cosmos, and observable motions and patterns in the sky?

Grade Level Expectations	Checks for Understanding	State Performance Indicators
GLE 0507.6.1 Compare planets based on their known characteristics. **GLE 0507.6.2** Recognize that charts can be used to locate and identify star patterns.	✓**0507.6.1** Develop a chart that communicates the major characteristics of each planet. ✓**0507.6.2** Use images of the night sky to identify different seasonal star patterns. ✓**0507.6.3** Research a star pattern using a chart.	**SPI 0507.6.1** Distinguish among the planets according to their known characteristics such as appearance, location, composition, and apparent motion. **SPI 0507.6.2** Select information from a complex data representation to draw conclusions about the planets. **SPI 0507.6.3** Identify methods and tools for identifying star patterns.

Grade 5 : Standard 7 – The Earth

Conceptual Strand 7

Major geologic events that occur over eons or brief moments in time continually shape and reshape the surface of the Earth, resulting in continuous global change.

Guiding Question 7

How is the earth affected by long-term and short term geological cycles and the influence of man?

Grade Level Expectations	Checks for Understanding	State Performance Indicators
GLE 0507.7.1 Compare geologic events responsible for the earth's major geological features.	✓**0507.7.1** Create a model to illustrate geologic events responsible for changes in the earth's crust.	**SPI 0507.7.1** Describe internal forces such as volcanoes, earthquakes, faulting, and plate movements that are responsible for the earth's

	✓**0507.7.2** Prepare a chart to compare how volcanoes, earthquakes, faulting, and plate movements affect the earth's surface features.	major geological features such as mountains, valleys, etc.

Grade 5 : Standard 8 - The Atmosphere

Conceptual Strand 8

The earth is surrounded by an active atmosphere and an energy system that controls the distribution life, local weather, climate, and global temperature.

Guiding Question 8

How do the physical characteristics and the chemical makeup of the atmosphere influence surface processes and life on Earth?

Grade Level Expectations	Checks for Understanding	State Performance Indicators
GLE 0507.8.1 Analyze and predict how major landforms and bodies of water affect atmospheric conditions.	✓**0507.8.1** Compare the climates of coastal and inland areas at similar latitudes to demonstrate the ocean's impact on weather and climate. ✓**0507.8.2** Use land maps to demonstrate how mountain ranges affect weather and climate. ✓**0507.8.3** Use weather maps of the United States to graph temperature and precipitation for inland and coastal regions. ✓**0507.8.4** Use local environmental	**SPI 0507.8.1** Describe the effects of the oceans on weather and climate. **SPI 0507.8.2** Explain how mountains affect weather and climate.

	information to analyze how weather and climate are affected by landforms and bodies of water.	

Grade 5 - Physical Science

Grade 5 : Standard 9 - Matter

Conceptual Strand 9

The composition and structure of matter is known, and it behaves according to principles that are generally understood.

Guiding Question 9

How does the structure of matter influence its physical and chemical behavior?

Grade Level Expectations	Checks for Understanding	State Performance Indicators
GLE 0507.9.1 Observe and measure the simple chemical properties of common substances. **GLE 0507.9.2** Design and conduct an experiment to demonstrate how various types of matter freeze, melt, or evaporate. **GLE 0507.9.3** Investigate factors that affect the rate at which various materials freeze, melt, or evaporate.	✓**0507.9.1** Compare the simple chemical properties of common substances. ✓**0507.9.2** Investigate how different types of materials freeze, melt, evaporate, or dissipate. ✓**0507.9.3** Use data from a simple investigation to determine how temperature change affects the rate of evaporation and condensation.	**SPI 0507.9.1** Distinguish between physical and chemical properties. **SPI 0507.9.2** Describe the differences among freezing, melting, and evaporation. **SPI 0507.9.3** Describe factors that influence the rate at which different types of material freeze, melt, or evaporate.

Grade 5 : Standard 10 - Energy

Conceptual Strand 10

Various forms of energy are constantly being transformed into other types without any net loss of energy from the system.

Guiding Question 10

What basic energy related ideas are essential for understanding the dependency of the natural and man-made worlds on energy?

Grade Level Expectations	Checks for Understanding	State Performance Indicators
GLE 0507.10.1 Design an experiment to illustrate the difference between potential and kinetic energy. **GLE 0507.10.2** Conduct experiments on the transfer of heat energy through conduction, convection, and radiation.	✓**0507.10.1** Design and conduct an investigation to demonstrate the difference between potential and kinetic energy. ✓**0507.10.2** Create a graphic organizer that illustrates different types of potential and kinetic energy. ✓**0507.10.3** Describe the differences among conduction, convection, and radiation. ✓**0507.10.4** Create a poster to illustrate the major forms of energy. ✓**0507.10.5** Demonstrate different ways that energy can be transferred from one object to another.	**SPI 0507.10.1** Differentiate between potential and kinetic energy. **SPI 0507.10.2** Use data from an investigation to determine the method by which heat energy is transferred from one object or material to another.

Grade 5 : Standard 11 - Motion

Conceptual Strand 11

Objects move in ways that can be observed, described, predicted, and measured.

Guiding Question 11

What causes objects to move differently under different circumstances?

Grade Level Expectations	Checks for Understanding	State Performance Indicators
GLE 0507.11.1 Design an investigation, collect data and draw conclusions about the relationship among mass, force, and distance traveled.	✓**0507.11.1** Predict how the amount of mass affects the distance traveled given the same amount of applied force. ✓**0507.11.2** Prepare statements about the relationship among mass, applied force, and distance traveled. ✓**0507.11.3** Design and conduct experiments using a simple experimental design to demonstrate the relationship among mass, force, and distance traveled.	**SPI 0507.11.1** Explain the relationship that exist among mass, force, and distance traveled.

Grade 5 : Standard 12 - Forces in Nature

Conceptual Strand 12

Everything in the universe exerts a gravitational force on everything else;
there is an interplay between magnetic fields and electrical currents.

Guiding Question 12

What are the scientific principles that explain gravity and electromagnetism?

Grade Level Expectations	Checks for Understanding	State Performance Indicators
GLE 0507.12.1 Recognize that the earth attracts objects without directly touching them. **GLE 0507.12.2** Investigate how the shape of an object influences the way that it falls toward the earth. **GLE 0507.12.3** Provide examples of how forces can act at a distance.	✓**0507.12.1** Explain and give examples of how forces act at a distance. ✓**0507.12.2** Demonstrate how the shape of an object affects how it falls toward the earth. ✓**0507.12.3** Design and explain an investigation exploring the earth's pull on objects.	**SPI 0507.12.1** Recognize that the earth attracts objects without touching them. **SPI 0507.12.2** Identify the force that causes objects to fall to the earth. **SPI 0507.12.3** Use data to determine how shape affects the rate at which a material falls to earth.