Zula Afterschool Discovery Program
Alignment with Louisiana K-5 Standards

All = All Mission Bundles
EN = Environmental Missions
SM = Simple Machines Missions
CM = Combining Matter Missions
HB = Habitat Missions
WE = Weather Missions
LT = Light Missions
RC = Rocks, Crystals, Minerals Missions
LC = Life Cycles Missions

Kindergarten

Language Arts

Reading and Responding

- ELA-1-E1 Recognize and understand words found in environmental print (All)
- ELA-1-E1 Read books with predictable, repetitive text and simple illustrations (All)
- ELA-1-E4 Identify basic story elements, including simple plot sequences, setting, and simple character descriptions, in a favorite story using pictures and/or oral responses (All)
- ELA-1-E5 Orally retell ideas and important facts in grade-appropriate texts read aloud by the teacher or read by the individual student (All)
- ELA-1-E5 Answer questions about the important characters, setting, and events of a story (All)
- ELA-1-E6 Describe the connections between life experiences and texts (All)
- ELA-7-E1 Demonstrate understanding of information in texts read aloud using a variety of strategies including: making predictions using prior knowledge and pictures, drawing conclusions from text, using pictures to resolve questions (All)
- ELA-7-E2 Identify problems in texts and offer possible solutions (All)
- ELA-7-E3 Identify different emotions and feelings of authors by participating in activities such as role-playing, illustrating, and answering questions (All)
- ELA-7-E4 Ask questions that demonstrate knowledge of character, setting, plot, and text type about texts read aloud (e.g., what, why, how) (All)

Writing

- ELA-2-E1 Write using developmental/inventive spelling, supported by drawing or dictation to the teacher to express ideas (All)
- ELA-2-E2 Use illustrations, developmental/inventive spelling, and appropriate vocabulary to write for a specific purpose and/or audience (All)

- ELA-2-E3 Create simple text using prior knowledge by drawing, dictating to the teacher, and/or writing using developmental/inventive spelling (All)
- ELA-2-E6 Use developmental/inventive spelling, supported by pictures, to represent a word or idea or to respond to a life experience or a text read aloud (All)

Speaking and Listening

- ELA-4-E1 Initiate and sustain normal conversation on a specific topic with the teacher (All)
- ELA-4-E2 Give and follow one- and two-step verbal and nonverbal directions without interrupting (All)
- ELA-4-E3 Relate an experience or creative story in a logical sequence (All)
- ELA-4-E3 Describe people, places, things (e.g., size, color, shape), locations, and actions from a story read aloud (All)
- ELA-4-E6 Respond to video/film versions of a story read aloud through activities such as role-playing, illustrating, and discussing without interruption (All)

Mathematics

Number and Number Relations

- N-1-E Count a set of 20 or fewer objects by establishing a 1-to-1 correspondence between number names and objects (All)
- N-1-E Use the ordinal numerals 1st through 10th to discuss positions in ordered lists (SM, LC)
- N-3-E Compare sets containing 20 or fewer objects using the words *same/different* and *more/less/greater/fewer* (SM, HB, EN, CM, LC, RC, LT)

Algebra

- A-1-E Use the words *same, different, equal, not equal, greater than,* and *less than* while using concrete objects for comparative models (All)

Measurement

- M-3-E Use comparative and superlative vocabulary in measurement settings (e.g., *longest, shortest, most, hottest, heaviest, biggest*) (All)

Geometry

- G-1-E Name and identify basic shapes using concrete models (e.g., circles, squares, triangles, rectangles, rhombuses, balls, boxes, cans, cones) (SM)
- G-2-E Compare, contrast, and sort objects or shapes according to two attributes (e.g., shape and size, shape and color, thickness and color) (All)
- G-3-E Use words that indicate direction and position of objects and arrange an object in a specified position and orientation (e.g., between, behind, above) (All)
- G-4-E Draw circles, squares, rectangles, and triangles (SM, EN, WE)

Data Analysis, Probability, and Discrete Math

- D-1-E Collect and organize data in a simple bar graph using pictures or objects (LC, RC, LT, SM)
- D-2-E Sort, represent, and use information in simple tables and bar/picture graphs (SM, EN, HB, WE, LT, RC)

Science

Science as Inquiry

- SI-E-A1 Ask questions about objects and events in the environment (All)
- SI-E-A1 Pose questions that can be answered by using students' own observations and scientific knowledge (All)
- SI-E-A2 Predict and anticipate possible outcomes (All)
- SI-E-A3 Use the five senses to describe observations (All)
- SI-E-A4 Measure and record length and temperature in both metric system and U.S. system units (SM, WE, EN)
- SI-E-A4 Select and use developmentally appropriate equipment and tools and units of measurement to observe and collect data (All)
- SI-E-A5 Express data in a variety of ways by constructing illustrations, graphs, charts, tables, concept maps, and oral and written explanations as appropriate (All)
- SI-E-A6 Use a variety of appropriate formats to describe procedures and to express ideas about demonstrations or experiments (e.g., drawings, journals, reports, presentations, exhibitions, portfolios) (All)
- SI-E-A7 Identify and use appropriate safety procedures and equipment when conducting investigations (All)

Physical Science

Properties of Objects and Materials

- PS-E-A1 Identify objects by using the senses (All)
- PS-E-A1 Construct patterns by using color, size, and shape of objects (SM)
- PS-E-A1 Sort objects based on their properties (e.g., size, weight, texture) (SM, HB,CM, EN, RC, LC, LT)
- PS-E-A5 Create and separate mixtures (e.g., oil/water, rice/beans) (CM, RC)

Position and Motion of Objects

- PS-E-B1 Follow directions using vocabulary such as *front/back*, *above/below*, *right/left*, and *next to* (All)
- PS-E-B3 Trace the motion of an object, such as a ball or toy car, as it rolls (SM)
- PS-E-B3 Sequence the relative order of the speed of various objects (e.g., snails, turtles, tricycles, bicycles, cars, airplanes) (SM)

Forms of Energy

- PS-E-C3 Identify objects that give off heat, such as people, animals, and the Sun (EN, HB, WE, CM, LT, LC, RC)

Life Science

Characteristics of Organisms

- LS-E-A1 Record observations on the growth of plant seeds (HB, LC)
- LS-E-A2 Classify objects in a variety of settings as *living (biotic)* or *nonliving (abiotic)* (HB, LC)
- LS-E-A4 Identify easily observable variations within types of plants and animals (e.g., features of classmates, varieties of trees, breeds of dogs) (HB, EN, LC)

Life Cycles and Organisms

- LS-E-B1 Observe life cycles and describe changes (e.g., humans, dogs, insects) (HB, LC)

Earth and Space Science
Properties of Earth Materials

- ESS-E-A2 Distinguish between areas of Earth covered by land and water (HB)
- ESS-E-A4 Identify the patterns in information recorded on a weather calendar (WE)

Objects in the Sky

- ESS-E-B1 Discuss and differentiate objects seen in the day and/or night sky (e.g., clouds, Sun, stars, Moon) (WE, LT)

First Grade

Language Arts

Reading and Responding

- ELA-1-E3 Demonstrate ability to read and follow two-step written directions (All)
- ELA-1-E4 Identify story elements, including: speaker or narrator, setting, characters, plot, problems and solutions (All)
- ELA-1-E5 Retell important facts from informational text (All)
- ELA-1-E6 Identify themes in texts and relate themes to personal prior experience or experience of others (All)
- ELA-7-E1 Demonstrate understanding of information in texts using a variety of strategies, including: identifying the main idea and some details in a text, after finishing a story, discuss predictions made during reading to determine whether they were reasonable, making simple inferences about characters and events, resolving questions about meaning by using prior knowledge, basic reasoning skills, context clues, and pictures during read-alouds (All)
- ELA-7-E2 Identify alternative solutions and consequences to a problem in texts (All)

Speaking and Listening

- ELA-4-E2 Follow classroom procedures (e.g., organizing materials) according to teacher directions (All)
- ELA-4-E2 Give or explain directions for simple processes (e.g., explaining an assignment) to classmates (All)
- ELA-4-E2 Ask questions to clarify directions and/or classroom routines. (All)
- ELA-4-E5 Use active listening strategies (e.g., making eye contact, asking questions, restating acquired information and procedures) to acquire information and understand procedures (All)
- ELA-4-E6 Listen and orally respond to information presented in a variety of media, such as audio and video recordings (All)

Information Resources

- ELA-5-E2 Use various sources, including print materials and observations, to gather information to explain a topic (All)
- ELA-5-E3 Record data through pictures or words (All)
- ELA-5-E6 Locate and read information on simple charts and graphs (WE, EN, RC)

Mathematics

Number and Number Relations

- N-2-E Apply estimation strategies to estimate the size of groups up to 20 (SM, CM)

Measurement

- M-1-E Measure length to the nearest inch and centimeter using appropriate tools (SM, RC, LT)
- M-2-E Select appropriate non-standard units for linear measurement situations (e.g., sticks, blocks, paper clips) (SM, LT)
- M-2-E Identify the thermometer as a tool for measuring temperature (EN, WE)

Geometry

- G-1-E Compare, contrast, name, and describe attributes (e.g., corner, side, straight, curved, number of sides) of shapes using concrete models [circle, rectangle (including square), rhombus, triangle] (SM)
- G-3-E Identify congruent shapes (i.e., same size and shape) in a variety of positions and orientations (SM)

Data Analysis, Probability, and Discrete Math

- D-1-E Determine whether an object satisfies a simple logical classification rule (e.g., belongs and does not belong) (SM, EN, HB, CM, RS, LT, LC)
- D-5-E Appropriately use basic probability vocabulary (e.g., *more likely to happen/less likely to happen*, *always/never, same as*) (All)

Science

Science as Inquiry

- SI-E-A1 Ask questions about objects and events in the environment (All)
- SI-E-A1 Pose questions that can be answered by using students' own observations and scientific knowledge (All)
- SI-E-A2 Predict and anticipate possible outcomes (All)
- SI-E-A3 Use the five senses to describe observations (All)
- SI-E-A2 Use a variety of methods and materials and multiple trials to investigate ideas (All)
- SI-E-A4 Measure and record length and temperature in both metric system and U.S. system units (SM, WE, EN, LC, RC, LT)
- SI-E-A4 Select and use developmentally appropriate equipment and tools and units of measurement to observe and collect data (All)
- SI-E-A5 Express data in a variety of ways by constructing illustrations, graphs, charts, tables, concept maps, and oral and written explanations as appropriate (All)
- SI-E-A6 Use a variety of appropriate formats to describe procedures and to express ideas about demonstrations or experiments (e.g., drawings, journals, reports, presentations, exhibitions, portfolios) (All)
- SI-E-A7 Identify and use appropriate safety procedures and equipment when conducting investigations (All)

Physical Science
Properties of Objects and Materials

- PS-E-A1 Sort a group of objects by using multiple characteristics (SM, HB,CM, EN, LC, LT, RS)
- PS-E-A2 Measure length and width of a variety of objects and materials by using nonstandard tools, such as a paper clip, cube, shoe, and hands (SM, LT)
- PS-E-A4 Observe and describe common properties of solids, liquids, and gases (EN, CM, WE)

Life Science
Characteristics of Organisms

- LS-E-A1 Describe the differences between plants and animals (HB, LC)
- LS-E-A1 Identify what animals and plants need to grow and develop (HB, EN, LC)
- LS-E-A2 Describe the characteristics of *living (biotic)* and *nonliving (abiotic)* things (HB, LC)

Life Cycles of Organisms

- LS-E-B1 Record and share observations of changes in developing plants (HB, LC)

Organisms and Their Environments

- LS-E-C1 Describe features of some animals that benefit them in their environments (HB, EN, LC)
- LS-E-C2 Record evidence of plants and animals in the schoolyard or other environments (HB, LC)

Earth and Space Science
Properties of Earth Materials

- ESS-E-A2 Locate and compare the relative proportions of land and water found on Earth (HB)
- ESS-E-A3 Illustrate how water changes from one form to another (e.g., freezing, melting, evaporating) (WE, RC)
- ESS-E-A4 Compare weather patterns as they relate to seasonal changes in students' immediate environment (WE, LC)

Second Grade

Language Arts

Reading and Responding

- ELA-1-E4 Identify story elements, including effects of setting on events and characters (All)
- ELA-1-E6 Make statements about how previous reading and life experiences relate to information read in texts (All)
- ELA-7-E1 Demonstrate understanding of information in texts using a variety of strategies, including: comparing and contrasting story elements (e.g., character, setting, events), predicting what will happen next in a story or a text, making simple inferences about information in texts, self-monitoring consistently for comprehension using multiple strategies and self-correcting as appropriate (All)
- ELA-7-E2 Discuss and choose the most appropriate solution to a problem in texts (All)
- ELA-7-E4 Apply basic reasoning skills, including: discussing the relationship between cause-effect, asking questions about texts read independently including why and how (All)

Speaking and Listening

- ELA-4-E2 Give/relate multi-step directions to classmates (All)
- ELA-4-E5 Use active listening strategies, including asking for clarification and explanations (All)
- ELA-4-E5 Give oral responses, including: telling stories and personal experiences, giving explanations and reports (All)

- ELA-4-E6 Compare ideas from a wide variety of media (All)

Information Resources

- ELA-5-E2 Locate information about a topic from a variety of sources, including children's magazines, children's encyclopedias, and electronic references (All)
- ELA-5-E5 Tell and write about the sources of learned information (All)
- ELA-5-E6 Locate and read information on a chart, graph, diagram, map, and simple timeline (HB, WE, EN, RC)

Mathematics

Number and Number Relations

- N-2-E Make reasonable estimates of the number of objects in a collection with fewer than 100 objects (SM)

Measurement

- M-1-E Measure and appropriately label measures of length and perimeter (i.e., inch, centimeter, foot), capacity (i.e., cup, quart, liter), and weight/mass (i.e., pound, kilogram) (SM, CM, LT, RC, LC)
- M-1-E Read a thermometer in degrees Fahrenheit and Celsius and interpret the temperature (SM, WE, EN)
- M-2-E Select and use appropriate tools and units to measure length, time, capacity, and weight (e.g., scales for pounds and kilograms; rulers for inches and centimeters; measuring containers for cup, quarts, and liters) (SM, CM, LC, LT, RC)
- M-3-E Estimate length in standard units (inch, foot, and centimeter) (SM)

Geometry

- G-2-E Compare and contrast 3-dimensional shapes (i.e., sphere, cube, cylinder, cone, prism, pyramid) according to their attributes (e.g., number of faces, shape of faces) (SM)
- G-3-E Identify congruent 3-dimensional solids in a variety of positions and orientations (SM)

Data Analysis, Probability, and Discrete Math

- D-1-E Collect and organize data using observations, surveys, and experiments (All)
- D-3-E Generate questions that can be answered by collecting and analyzing data (All)

Science

Science as Inquiry

- SI-E-A1 Ask questions about objects and events in the environment (All)
- SI-E-A1 Pose questions that can be answered by using students' own observations, scientific knowledge, and testable scientific investigations (All)
- SI-E-A2 Use observations to design and conduct simple investigations or experiments to answer testable questions (All)
- SI-E-A2 Predict and anticipate possible outcomes (All)
- SI-E-A3 Use the five senses to describe observations (All)
- SI-E-A2 Use a variety of methods and materials and multiple trials to investigate ideas (All)
- SI-E-A4 Measure and record length and temperature in both metric system and U.S. system units (SM, WE, EN)

- SI-E-A4 Select and use developmentally appropriate equipment and tools and units of measurement to observe and collect data (All)
- SI-E-A5 Express data in a variety of ways by constructing illustrations, graphs, charts, tables, concept maps, and oral and written explanations as appropriate (All)
- SI-E-A6 Use a variety of appropriate formats to describe procedures and to express ideas about demonstrations or experiments (e.g., drawings, journals, reports, presentations, exhibitions, portfolios) (All)
- SI-E-A7 Identify and use appropriate safety procedures and equipment when conducting investigations (All)

Physical Science

Properties of Objects and Materials

- PS-E-A1 Record the temperature of objects (Celsius and Fahrenheit) (EN)
- PS-E-A2 Use standard tools to measure objects or materials (e.g., ruler, meter stick, measuring tape, pan balance, thermometer, graduated cylinder) (SM, EN, LT, RC)
- PS-E-A3 Observe, describe, and record the characteristics of materials that make up different objects (e.g., metal, nonmetal, plastic, rock, wood, paper) (All)
- PS-E-A5 Describe and illustrate what remains after water evaporates from a salt or sugar solution (CM, RC)

Position and Motion of Objects

- PS-E-B3 Observe and describe differences in motion between objects (e.g., toward/away, cardinal directions) (SM)

Life Science

Characteristics of Organisms

- LS-E-A1 Match the appropriate food source and habitat for a variety of animals (HB, EN, LC)
- LS-E-A3 Describe structures of plants (e.g., roots, leaves, stems, flowers, seeds) (HB, LC)
- LS-E-A3 Compare differences and similarities among a variety of seed plants (EN, HB, LC)
- LS-E-A4 Identify physical characteristics of organisms (e.g., worms, amphibians, plants) (EN, HB, LC)

Life Cycles of Organisms

- LS-E-B1 Compare the life cycles of selected organisms (e.g., mealworm, caterpillar, tadpole) (HB, LC)
- LS-E-B3 Describe inherited characteristics of living things (HB, EN, LC)

Organisms and Their Environments

- LS-E-C1 Identify the components of a variety of habitats and describe how organisms in those habitats depend on each other (HB, EN, LC)

Earth and Space Science

Properties of Earth Materials

- ESS-E-A4 Gather, record, and graph weather data (e.g., precipitation, wind speed, wind direction, temperature) using appropriate instruments (WE, EN)

Objects in the Sky

- ESS-E-B5 Give examples of how the Sun affects Earth's processes (e.g., weather, water cycle) (WE)

Science and the Environment

- SE-E-A2 Locate and identify plants and animals within an ecosystem (HB, EN, LC)
- SE-E-A2 Illustrate and describe a simple food chain located within an ecosystem (HB, LC)
- SE-E-A5 Describe ways in which habitat loss or change can occur as a result of natural events or human impact (HB, EN)
- SE-E-A5 Describe and give examples of threatened or endangered species (HB)

Third Grade

Language Arts

Reading and Responding

- ELA-1-E4 Identify story elements including: theme, conflict, character traits, feelings, and motivation (All)
- ELA-1-E5 Demonstrate understanding by summarizing stories and information, including the main events or ideas and selected details from the text in oral and written responses (All)
- ELA-1-E6 Connect ideas, events, and information identified in grade-appropriate texts to prior knowledge and life experiences in oral and written responses (All)
- ELA-7-E1 Demonstrate understanding of information in grade-appropriate texts using a variety of strategies including: sequencing events, making predictions using information from texts, making simple interferences and drawing conclusions about information in texts, comparing and contrasting, including story elements and main points or ideas in informational texts, distinguishing between a main ideas and a summary, identifying main ideas of texts (All)
- ELA-7-E2 Explain chosen solutions to problems in texts (All)
- ELA-7-E4 Apply basic reasoning skills including: identifying differences between fact and opinion, skimming and scanning texts to locate specific information, identifying multiple causes and/or effects in texts and life situations, raising questions to obtain clarification and/or direct investigation, connecting what is learned to real-life situations (All)

Writing

- ELA-2-E2 Incorporate grade-appropriate vocabulary and information when writing for an intended audience and/or purpose (All)

Speaking and Listening

- ELA-4-E2 Give and follow precise directions and instructions (All)
- ELA-4-E5 Use active listening strategies, including: asking questions and responding to ideas/opinions, giving oral responses, such as explanations of written and/or spoken texts (All)
- ELA-4-E6 Compare ideas and points of view from a wide variety of media, including television, video, music, the Web, charts, and print materials (All)
- ELA-4-E7 Assume the role of discussion leader, contributor, and active listener

Information Resources

- ELA-5-E2 Locate information from multiple sources, including books, periodicals, videotapes, Web sites, and CD-ROMs (All)
- ELA-5-E2 Determine appropriateness of collected information for a specified purpose (All)
- ELA-5-E6 Locate information found in graphic organizers such as timelines, charts, graphs, schedules, tables, diagrams, and maps (All)

Mathematics

Measurement

- M-1-E Measure length to the nearest yard, meter, and half inch (SM, LC, LT, RC)
- M-2-E Select and use the appropriate standard units of measure, abbreviations, and tools to measure length and perimeter, area, capacity, and weight/mass (SM, CM, LC, LT, RC)
- M-3-E Estimate length, weight/mass, and capacity (SM)

Data Analysis, Probability, and Discrete Math

- D-1-E Identify categories and sort objects based on qualitative and quantitative characteristics (SM, EN, HB, LT, LC, RC)
- D-2-E Read, describe, and organize a two-circle Venn diagram (EN)

Science

Science as Inquiry

- SI-E-A1 Ask questions about objects and events in the environment (All)
- SI-E-A1 Pose questions that can be answered by using students' own observations, scientific knowledge, and testable scientific investigations (All)
- SI-E-A2 Use observations to design and conduct simple investigations or experiments to answer testable questions (All)
- SI-E-A2 Predict and anticipate possible outcomes (All)
- SI-E-A2 Use a variety of methods and materials and multiple trials to investigate ideas (All)
- SI-E-A3 Use the five senses to describe observations (All)
- SI-E-A4 Measure and record length and temperature in both metric system and U.S. system units (SM, WE, EN)
- SI-E-A4 Select and use developmentally appropriate equipment and tools and units of measurement to observe and collect data (All)
- SI-E-A4 Express data in a variety of ways by constructing illustrations, graphs, charts, tables, concept maps, and oral and written explanations as appropriate (All)
- SI-E-A5 Combine information, data, and knowledge from one or more of the science content areas to reach a conclusion or make a prediction (All)
- SI-E-A6 Use a variety of appropriate formats to describe procedures and to express ideas about demonstrations or experiments (e.g., drawings, journals, reports, presentations, exhibitions, portfolios) (All)
- SI-E-A7 Identify and use appropriate safety procedures and equipment when conducting investigations (All)

Understanding Scientific Inquiry

- SI-E-B1 Identify questions that need to be explained through further inquiry (All)

- SI-E-1B Distinguish between what is known and what is unknown in scientific investigations (All)
- SI-E-B5 Describe procedures and communicate data in a manner that allows others to understand and repeat an investigation or experiment (All)

Physical Science
Properties of Objects and Materials

- PS-E-A1 Compare and classify objects on properties determined through experimentation (CM, RC, LT)
- PS-E-A2 Select the appropriate metric system and U.S. system tools for measuring length, width, temperature, volume, and mass (SM, CM, EN, LC, LT, RC)
- PS-E-A4 Measure temperature by using Fahrenheit and Celsius thermometers and compare results (EN)
- PS-E-A4 Investigate and explain conditions under which matter changes physical states: heating, freezing, evaporating, condensing, boiling (EN, CM, WE, RC)

Forms of Energy

- PS-E-C6 Identify simple machines and the tasks they make possible (SM)

Life Science
Characteristics of Organisms

- LS-E-A3Compare structures in a variety of animals (EN, HB, LC)
- LS-E-A3 Compare structures and their functions in a variety of plants (HB, LC)
- LS-E-A3 Describe how plant structures enable the plant to meet its basic needs (WE, HB, LC)
- LS-E-A4 Classify groups of organisms based on common characteristics (EN, HB, LC)

Earth and Space Science
Properties of Earth Materials

- ESS-E-A2 Describe the difference between weather and climate (EN, WE)
- ESS-E-A3 Identify examples of the processes of a water cycle (WE)

Science and the Environment

- SE-1-A1 Describe the interrelationships of living and nonliving components within various ecosystems (HB, WE, LC)
- SE-E-A3 Describe how humans have had negative and positive effects on organisms and their environments (EN, HB)
- SE-E-A5 Explain how selected animals once classified as endangered have recovered (HB)

Fourth Grade

Language Arts

Reading and Responding

- ELA-1-E4 Identify a variety of story elements, including: the impact of setting on character, multiple conflicts, first- and third-person points of view, development of theme (All)
- ELA-1-E5 Answer literal and inferential questions about ideas and information in

grade-appropriate texts in oral and written responses (All)

- ELA-1-E6 Connect information in grade-appropriate texts to prior knowledge and real-life situations in oral and written responses (All)
- ELA-1-E7 Increase oral and silent reading fluency and accuracy with grade-appropriate texts (All)
- ELA-7-E1 Demonstrate understanding of information in grade-appropriate texts using a variety of strategies, such as: sequencing events and steps in a process, explaining how the setting impacts other story elements, including the characters' traits and actions, using specific evidence from a story to describe a character's traits, actions, relationships, and/or motivations, confirming or denying a prediction about information in a text comparing and contrasting story elements or information within and across texts identifying stated main ideas and supporting details making simple inferences (All)
- ELA-7-E2 Justify solutions to problems in texts by verifying, confirming, and supporting (All)
- ELA-7-E4 Demonstrate understanding of information in grade-appropriate texts using a variety of strategies, including: supporting differences between fact and opinion with information from texts, skimming and scanning texts for various purposes (e.g., locating information, verifying facts), identifying cause-effect relationships in texts and real-life situations, generating questions to guide examination of topics in texts and real-life situations, explaining connection between information from texts and real-life experiences (All)

Writing

- ELA-2-E2 Identify an audience for a specific writing assignment and select appropriate vocabulary, details, and information to create a tone or set the mood and to affect or manipulate the intended audience (All)
- ELA-2-E6 Write for various purposes, including: formal and informal letters that follow a specific letter format, include relevant information, and use an appropriate closure, informational reports that include facts and examples and that present important details in a logical order, book reports that include an opinion and/or a persuasive viewpoint (All)

Speaking and Listening

- ELA-4-E2 Interpret, follow, and give multi-step directions (All)
- ELA-4-E4 Deliver presentations that include the following: information drawn from several sources and identification of the sources, effective introductions and conclusions details, examples, anecdotes, or statistics that explain or clarify information, information selected to persuade or influence the audience (All)
- ELA-4-E7 Identify the effectiveness and dynamics of group process and cooperative learning (All)

Information Resources

- ELA-5-E1 Locate information using organizational features of a variety of resources, including: electronic information such as keyword searches, passwords, and entry menu features, print materials such as indices, glossaries, table of contents, title pages, and map legends (All)
- ELA-5-E1 Locate information using a broad variety of reference sources, including almanacs, atlases, newspapers, magazines, and brochures (All)
- ELA-5-E3 Paraphrase or summarize information from a variety of sources (All)
- ELA-5-E4 Use electronic and print resources (e.g., spelling, grammar, and thesaurus checks) to revise and publish book reviews and research reports (All)
- ELA-5-E6 Read and interpret timelines, charts, graphs, schedules, tables, diagrams, and maps generated from grade-appropriate materials (All)

Mathematics

Measurement

- M-1-E Measure length to the nearest quarter-inch and mm (SM, LC, LT, RC)
- M-3-E Describe the concept of volume, and measure volume using cubic in. and cubic cm and capacity using fl. oz. and ml (CM, RC)
- M-2-E Select and use the appropriate standard units of measure, abbreviations, and tools to measure length and perimeter (i.e., in., cm, ft., yd., mile, m, km), area (i.e., square inch, square foot, square centimeter), capacity (i.e., fl. oz., cup, pt., qt., gal., l, ml), weight/mass (i.e., oz., lb., g, kg, ton), and volume (i.e., cubic cm, cubic in.) (SM, CM, LC, LT, RC)
- M-5-E Recognize the attributes to be measured in a real-life situation (SM, CM, LC, LT, RC)

Data Analysis, Probability, and Discrete Math

- D-1-E Summarize information and relationships revealed by patterns or trends in a graph, and use the information to make predictions (LC, RC, LT, SM)
- D-2-E Analyze, describe, interpret, and construct various types of charts and graphs using appropriate titles, axis labels, scales, and legends (SM, EN, HB, WE, LT, RC)
- D-3-E Solve problems involving simple deductive reasoning (All)

Science

Science as Inquiry
The Abilities to Do Scientific Inquiry

- SI-E-A1 Ask questions about objects and events in the environment (e.g., plants, rocks, storms) (All)
- SI-E-A1 Pose questions that can be answered by using students' own observations, scientific knowledge, and testable scientific investigations (All)
- SI-E-A2 Use observations to design and conduct simple investigations or experiments to answer testable questions (All)
- SI-E-A2 Predict and anticipate possible outcomes (All)
- SI-E-A2 Identify variables to ensure that only one experimental variable is tested at a time (All)
- SI-E-A2 Use a variety of methods and materials and multiple trials to investigate ideas (observe, measure, accurately record data) (All)
- SI-E-A3 Use the five senses to describe observations (All)
  SI-E-A4 Measure and record length, temperature, mass, volume, and area in both metric system and U.S. system units (SM, CM, WE, EN, LC, LT, RC)
- SI-E-A4 Select and use developmentally appropriate equipment and tools (e.g., magnifying lenses, microscopes, graduated cylinders) and units of measurement to observe and collect data (All)
- SI-E-B4 Express data in a variety of ways by constructing illustrations, graphs, charts, tables, concept maps, and oral and written explanations as appropriate (All)
- SI-E-A5Combine information, data, and knowledge from one or more of the science content areas to reach a conclusion or make a prediction (All)
- SI-E-A6 Use a variety of appropriate formats to describe procedures and to express ideas about demonstrations or experiments (e.g., drawings, journals, reports, presentations, exhibitions, portfolios) (All)
  SI-E-A7 Identify and use appropriate safety procedures and equipment when conducting investigations (e.g., gloves, goggles, hair ties) (All)

Understanding Scientific Inquiry

- SI-E-B1 Identify questions that need to be explained through further inquiry (All)
- SI-E-B1 Distinguish between what is known and what is unknown in scientific investigations (All)
- SI-E-B2 Select the best experimental design to answer a given testable question (All)
- SI-E-B3 Recognize that a variety of tools can be used to examine objects at different degrees of magnification (e.g., hand lens, microscope) (RC, CM)
- SI-E-B4 Base explanations and logical inferences on scientific knowledge, observations, and scientific evidence (All)
- SI-E-B5 Describe procedures and communicate data in a manner that allows others to understand and repeat an investigation or experiment (All)
- SI-EB6 Determine whether further investigations are needed to draw valid conclusions (All)
- SI-E-B6 Use evidence from previous investigations to ask additional questions and to initiate further explorations (All)

Physical Science

Properties of Objects and Materials

- PS-E-A2 Determine linear, volume, and weight/mass measurements by using both metric system and U.S. system units to compare the results (SM, CM, LC, EN, LT, RC)
- PS-E-A4 Illustrate how heating/cooling affects the motion of small particles in different phases of matter (EN, CM, WE, RC)
- PS-E-A5 Describe various methods to separate mixtures (e.g., evaporation, condensation, filtration, magnetism) (CM, RC)

Position and Motion of Objects

- PS-E-B3 Measure, record, and graph changes in position over time (e.g., speed of cars, ball rolling down inclined plane) (SM)

Forms of Energy

- PS-E-C2 Diagram what happens to white light as it passes through a prism (LT)
- PS-E-C2 Describe how light bends or refracts when traveling through various materials (e.g., pencil in a glass of water) (LT)

Life Science

Characteristics of Organisms

- LS-E-A3 Explain the functions of plant structures in relation to their ability to make food through photosynthesis (e.g., roots, leaves, stems, flowers, seeds) (HB, LC)
- LS-E-A3 Describe how parts of animals' bodies are related to their functions and survival (e.g., wings/flying, webbed feet/swimming) (EN, HB, LC)

Life Cycles of Organisms

- LS-E-B1 Identify reproductive structures in plants and describe the functions of each (HB, LC)
- LS-E-B1 Sequence stages in the life cycles of various organisms, including seed plants (HB, LC)
- LS-E-B2 Classify examples of plants and animals based on a variety of criteria (EN, HB, LC)
- LS-E-B3 Compare similarities and differences between parents and offspring in plants and animals (LC)

Organisms and Their Environments

- LS-E-C1 Explain how some organisms in a given habitat compete for the same resources (HB, LC)
- LS-E-C2 Describe how some plants and animals have adapted to their habitats (HB)
- LS-E-C2 Identify the habitat in which selected organisms would most likely live and explain how specific structures help organisms to survive (EN, HB)
- LS-E-C3 Describe the effect of sudden increases or decreases of one group of organisms upon other organisms in the environment (HB)

Earth and Space Science

Properties of Earth Materials

- ESS-E-A1 Recognize that sedimentary rocks are composed of particles that result from weathering and erosion (e.g., sandstones, conglomerates) (RC)
- ESS-E-A3 Draw, label, and explain the components of a water cycle (WE)
- ESS-E-A4 Measure, chart, and predict the weather using various instruments (e.g., thermometer, barometer, anemometer) (WE)
- ESS-E-A4 Identify various types of weather-related natural hazards and effects (e.g., lightning, storms) (WE)
- ESS-E-A5 Classify rocks and minerals according to texture, color, luster, hardness, and effervescence (RC)

Science and the Environment

- SE-E-A1 Design an ecosystem that includes *living (biotic)* and *nonliving (abiotic)* components and illustrates interdependence (EN, WE, HB)
- SE-EA2 Describe and explain food chains/webs and the directional flow of energy in various ecosystems (e.g., construct a model, drawing, diagram, graphic organizer) (HB, LC)
- SE-E-A2 Predict and describe consequences of the removal of one component in a balanced ecosystem (e.g., consumer, herbivores, nonliving component) (HB)

<u>Fifth Grade</u>

Language Arts

Reading and Responding

- ELA-1-M1 Develop specific vocabulary (e.g., for reading scientific, geographical, historical, and mathematical texts, as well as news and current events) for various purposes (All)
- ELA-1-M2 Identify and explain story elements, including: theme development, character development, relationship of word choice and mood, plot sequence (e.g., exposition, rising action, climax, falling action, resolution) (All)
- ELA-1-M4 Identify the connections between ideas and information in a variety of texts (e.g., cartoons, poetry, fiction, instructional manuals) and real-life situations and other texts (All)
- ELA-7-M1 Demonstrate understanding of information in grade-appropriate texts using a variety of strategies, including: sequencing events and steps in a process, summarizing and paraphrasing information, identifying stated and implied main ideas and supporting details for each, comparing and contrasting literary elements and ideas, making simple inferences and drawing conclusions, predicting the outcome of a story or situation with reasonable justification, identifying literary devices (All)

- ELA-7-M2 Examine and explain the relationship between life experiences and texts to generate solutions to problems (All)
- ELA-7-M2 Use technical information and other available resources (e.g., software programs, manuals) to solve problems (All)
  ELA-7-M4 Analyze grade-appropriate print and nonprint texts using various reasoning skills, including: identifying cause-effect relationships, raising questions, thinking inductively and deductively, generating a theory or hypothesis, skimming/scanning distinguishing facts from opinions and probability (All)

Writing

- ELA-2-M6 Write for various purposes, including: formal and informal letters that state a purpose, make requests, or give compliments, evaluations of media, such as films, performances, or field trips, explanations of stories and poems using retellings, examples, and text-based evidence (All)

Speaking and Listening

- ELA-4-M2 Follow procedures (e.g., read, question, write a response, form groups) from detailed oral instructions (All)
- ELA-4-M2 Restate or describe oral directions/procedures for tasks (All)
- ELA-4-M4 Demonstrate active listening strategies (e.g., asking focused questions, responding to questions, making visual contact) (All)
- ELA-4-M4 Deliver formal and informal presentations for a variety of purposes, including: book reports, personal experiences, explanations of projects (All)
- ELA-4-M5 Evaluate media for various purposes, including: effectiveness of organization and presentation, usefulness and relevance of information (All)

Information Resources

- ELA-5-M1 Locate and select information using a variety of organizational features in grade-appropriate resources, including: complex reference sources (e.g., almanacs, atlases, newspapers, magazines, brochures, map legends, prefaces, appendices), electronic storage devices (e.g., CD-ROMs, diskettes, software, drives), frequently accessed and bookmarked Web addresses (All)
- ELA-5-M2 Locate and integrate information from grade-appropriate resources, including: multiple printed texts (e.g., encyclopedias, atlases, library catalogs, specialized dictionaries, almanacs, technical encyclopedias), electronic sources (e.g., Web sites, databases, audio and video tapes, films, documentaries) for use in researching a topic (All)
- ELA-5-M3 Locate, gather, and select information using data-gathering strategies, including: surveying, interviewing, paraphrasing (All)
- ELA-5-M6 Interpret information from a variety of grade-appropriate sources, including timelines, charts, schedules, tables, diagrams, and maps (All)

Mathematics

Measurement

- M-1-M Model, measure, and use the names of all common units in the U.S. and metric systems (SM, CM, LC, LT, RC)
- M-2-M Estimate time, temperature, weight/mass, and length in familiar situations and explain the reasonableness of answers (SM)
- M-3-M Identify appropriate tools and units with which to measure time, mass, weight, temperature, and length (SM, CM, LC, LT, RC)

Data Analysis, Probability, and Discrete Math

- D-1-M Use various types of charts and graphs, including double bar graphs, to organize, display, and interpret data and discuss patterns verbally and in writing (LC, RC, LT, SM)
- D-2-M Compare and contrast survey data from two groups relative to the same question (All)

Science

Science as Inquiry

The Abilities To Do Scientific Inquiry

- SI-M-A1 Generate testable questions about objects, organisms, and events that can be answered through scientific investigation (All)
- SI-M-A1 Identify problems, factors, and questions that must be considered in a scientific investigation (All)
- SI-M-A1 Use a variety of sources to answer questions (All)
- SIM-A2 Design, predict outcomes, and conduct experiments to answer guiding questions (All)
- SI-M-A2 Identify independent variables, dependent variables, and variables that should be controlled in designing an experiment (All)
- SI-M-A3 Select and use appropriate equipment, technology, tools, and metric system units of measurement to make observations (All)
- SI-M-A3 Record observations using methods that complement investigations (e.g., journals, tables, charts) (All)
- SI-M-A3 Use consistency and precision in data collection, analysis, and reporting (All)
- SI-M-A4 Identify the difference between description and explanation (All)
- SI-M-A4 Construct, use, and interpret appropriate graphical representations to collect, record, and report data (e.g., tables, charts, circle graphs, bar and line graphs, diagrams, scatter plots, symbols) (RC, LT, LC, SM)
- SI-M-A4 Use data and information gathered to develop an explanation of experimental results (All)
- SI-M-A5 Use evidence to make inferences and predict trends (All)
- SI-M-A6 Recognize that there may be more than one way to interpret a given set of data, which can result in alternative scientific explanations and predictions (All)
- SI-M-A6 Identify faulty reasoning and statements that misinterpret or are not supported by the evidence (All)
- SI-M-A7 Communicate ideas in a variety of ways (e.g., symbols, illustrations, graphs, charts, spreadsheets, concept maps, oral and written reports, equations) (All)
- SI-M-A7 Distinguish between *observations* and *inferences* (All)
- SI-M-A7 Use evidence and observations to explain and communicate the results of investigations (All)
- SI-M-A8 Use relevant safety procedures and equipment to conduct scientific investigations (All)

Understanding Scientific Inquiry

- SI-M-B1 Compare and critique scientific investigations (All)
- SI-M-B1 Use and describe alternate methods for investigating different types of testable questions (All)
- SI-M-B1 Recognize that science uses processes that involve a logical and empirical, but flexible, approach to problem solving (All)
- SI-M-B3 Recognize that there is an acceptable range of variation in collected data (All)

- SI-M-B5 Explain why an experiment must be verified through multiple investigations and yield consistent results before the findings are accepted (All)
- SI-M-B5 Critique and analyze their own inquiries and the inquiries of others (All)
- SI-M-B6 Explain that, through the use of scientific processes and knowledge, people can solve problems, make decisions, and form new ideas (All)

Physical Science

Properties and Changes of Properties in Matter

- PS-M-A1 Measure a variety of objects in metric system units (SM, CM, EN, LC, LT, RC)
- PS-M-A3 Identify the physical and chemical properties of various substances and group substances according to their observable and measurable properties (e.g., conduction, magnetism, light transmission) (LT, CM, RC, SM)
- PS-M-A5 Describe the properties and behavior of water in its solid, liquid, and gaseous phases (states) (EN)
- PS-M-A6 Describe new substances formed from common chemical reactions (e.g., burning paper produces ash) (CM)

Transformations of Energy

- PS-M-C3 Identify the Sun as Earth's primary energy source and give examples (e.g., photosynthesis, water cycle) to support that conclusion (EN, WE, PC, HB, LT)
- PS-M-C4 Investigate how changes in the position of a light source and an object alter the size and shape of the shadow (LT)

Life Science

Structure and Function in Living Systems

- LS-M-A3 Describe the metamorphosis of an amphibian (e.g., frog) (LC)
- LS-M-A4 Describe the processes of photosynthesis and respiration in green plants (LC, HB)

Populations and Ecosystems

- LS-M-C2 Construct food chains that could be found in ponds, marshes, oceans, forests, or meadows (HB, LC)
- LS-M-C2 Compare food chains and food webs (HB, LC)
- LS-M-C3 Identify and describe ecosystems of local importance (HB)
- LS-M-C3 Compare common traits of organisms within major ecosystems (EN)

Adaptations of Organisms

- LS-M-D1 Describe adaptations of plants and animals that enable them to thrive in local and other natural environments (HB, EN)

Earth and Space Science

Structure of the Earth

- ESS-M-A5 Identify common rocks and minerals and explain their uses and economic significance (RC)
- ESSM-A11 Identify, describe, and compare climate zones (e.g., polar, temperate, tropical) (EN, HB)
- ESSM-A12 Identify typical weather map symbols and the type of weather they represent (WE)

Earth History

- ESS-M-C1 Explain why the Moon, Sun, and stars appear to move from east to west across the sky (LT)
- ESS-M-C6 - ESS-M-A10 Identify and explain the interaction of the processes of the water cycle (WE)

Science and the Environment

- SE-MA4 Describe the consequences of several types of human activities on local ecosystems (e.g., polluting streams, regulating hunting, introducing nonnative species) (HB)