

GRADE 5

Energy Transfer and Transformations

5.1 — Sound and light are forms of energy.

State Framework	Grade-Level Expectations	CMT Correlation
5.1.b. Light is a form of energy that travels in a straight line and can be reflected by a mirror, refracted by a lens, or absorbed by objects.	<ol style="list-style-type: none">1. Demonstrate that light travels in straight lines away from a source in all directions.2. Investigate how light is refracted as it passes through a lens or at an angle from one transparent material to another.3. Demonstrate that white light is composed of many colors.4. Explain that all visible objects are reflecting some light to the human eye.5. Compare and contrast how light is reflected by a smooth, shiny object (e.g., mirror or pool of water) and how light is reflected by other objects.6. Measure angles to predict the path of light reflected by a mirror.7. Judge whether a material is opaque, transparent or translucent based on how light passes through it.8. Design light absorption experiments that vary the size, length, direction and clarity of a shadow by changing the position of the light-blocking object or the light source.	B19. Describe how light is absorbed and/or reflected by different surfaces.

GRADE 5

Structure and Function

5.2 Perceiving and responding to information about the environment is critical to the survival of organisms.

State Framework	Grade-Level Expectations:	CMT Correlation
5.2.a The sense organs perceive stimuli from the environment and send signals to the brain through the nervous system.	<ol style="list-style-type: none">1. Explain the role of sensory organs in influencing behaviors in response to environmental stimuli (e.g., light/dark, heat/cold, flavors, pain, etc.)2. Pose testable questions and design experiments to determine factors that affect human reaction time.3. Design and conduct simple investigations to explore the capabilities of the human senses.4. Create a display that illustrates the role of the brain and spinal cord in responding to information received from the sense organs.5. Identify the major structures of the human eye, ear, nose, skin and tongue, and explain their functions.6. Draw diagrams showing the straight path of light rays from a source to a reflecting object to the eye, allowing objects to be seen.7. Explain how properties of different materials and structures in the human eye affect humans' perception of color.	<p>B20. Describe how light absorption and reflection allow one to see the shapes and colors of objects.</p> <p>B21. Describe the structure and function of the human senses and the signals they perceive.</p>

GRADE 5

Earth in the Solar System

5.3 — Most objects in the solar system are in a regular and predictable motion.

State Framework	Grade-Level Expectations	CMT Correlation
5.3.a. The positions of the earth and moon relative to the sun explain the cycles of day and night, and the monthly moon phases.	<ol style="list-style-type: none">1. Explain how light from the sun and Earth’s 24-hour axial rotation causes day and night on Earth.2. Construct models demonstrating Earth’s rotation on its axis, the moon’s revolution around the Earth, and the Earth and moon revolving around the sun.3. Differentiate between the sun as a source of light and the moon as a reflection of that light.4. Observe and record the moon’s appearance over time and analyze findings to determine the monthly sequence of changes in its appearance (phases).5. Relate the moon phases to changes in the moon’s position relative to the Earth and sun during its 29-day revolution around the Earth.	<p>B22. Explain the cause of day and night based on the rotation of Earth on its axis.</p> <p>B23. Describe the monthly changes in the appearance of the moon, based on the moon’s orbit around the Earth.</p>

GRADE 5

Science and Technology in Society

5.4 — Humans have the capacity to build and use tools to advance the quality of their lives.

This content standard is an application of the concepts in content standard 5.1 and should be integrated into the same unit.

State Framework	Grade-Level Expectations:	CMT Correlation															
<p>5.4.a. Advances in technology allow individuals to acquire new information about the world.</p>	<ol style="list-style-type: none"> 1. Generalize that optical tools, such as binoculars, telescopes, eyeglasses or periscopes, change the path of light by reflecting or refracting it. 2. Construct simple periscopes and telescopes and analyze how the placement of their lenses and mirrors affects the quality of the image formed. 3. Given a selection of optical instruments, evaluate the best one for a given task. 4. Design and conduct simple investigations to determine how the shape of a lens or mirror (concave, convex, flat) affects the direction in which light rays travel. 5. Explain how eyeglasses or contact lenses improve vision by changing the path of light to the retina. 6. Analyze the similarities and differences between structures of the human eye and those of a simple camera. <table border="1" data-bbox="520 1024 1640 1312"> <thead> <tr> <th>HUMAN EYE</th> <th>CAMERA</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr> <td>Eyelid</td> <td>Lens cap</td> <td>Protect interior parts</td> </tr> <tr> <td>Pupil</td> <td>Lens opening (aperture)</td> <td>Control amount of light entering</td> </tr> <tr> <td>Cornea, lens</td> <td>Lens</td> <td>Focus light rays on a point</td> </tr> <tr> <td>Retina</td> <td>Film (or digital medium)</td> <td>Respond to light resulting in an image</td> </tr> </tbody> </table>	HUMAN EYE	CAMERA	FUNCTION	Eyelid	Lens cap	Protect interior parts	Pupil	Lens opening (aperture)	Control amount of light entering	Cornea, lens	Lens	Focus light rays on a point	Retina	Film (or digital medium)	Respond to light resulting in an image	<p>B24. Compare and contrast the structures of the human eye with those of the camera.</p> <p>B25. Describe the uses of different instruments, such as eye glasses, magnifiers, periscopes and telescopes, to enhance our vision.</p>
HUMAN EYE	CAMERA	FUNCTION															
Eyelid	Lens cap	Protect interior parts															
Pupil	Lens opening (aperture)	Control amount of light entering															
Cornea, lens	Lens	Focus light rays on a point															
Retina	Film (or digital medium)	Respond to light resulting in an image															

Grade 5

Content Standard: Inquiry-Students should demonstrate how scientific knowledge is created and communicated.

Students Expected Performances:

Analyze critique and communicate investigations using words, graphs and drawings.

Read and write about a variety of science related non-fiction texts.

Search the Web and locate relevant science information.

Use mathematics to analyze, interpret and present data.

Content Standard: Physical Science- Energy Transfer and Transformation- Students should demonstrate that Sound and Light are forms of energy.

Students Expected Performances:

Describe the factors that affect the pitch and loudness of sound produced by vibrating objects.

Describe how sound is transmitted, reflected, and/or absorbed by different materials.

Describe what is light and how does light travel.

Describe how light is absorbed and/or reflected by different surfaces.

Content Standard: Life Science- Structure and Function- Students should demonstrate how organisms are structured to ensure efficiency and survival.

Students Expected Performances:

Describe the structure and function of the human senses.

Describe the signals we perceive with the human eye and ear.

Describe how light absorption and reflection allow one to see the shapes and colors of objects.

Content Standard: Earth Science- Forces and Motion- Students should demonstrate how external and internal sources of energy affect the Earth's systems.

Students Expected Performances:

Describe how the surface of the earth changes through weathering, erosion, landslides, volcanic eruptions and earthquakes.

Content Standard: Earth Science- Earth in the Solar System- Students should demonstrate how the position of Earth in the solar system affects conditions on the planet.

Students Expected Performances:

Explain the cause of day and night based on the rotation of earth on its axis.

Describe the monthly changes in the appearance of the moon based on its orbit around Earth.

Describe Earth's position in the Solar System and its relationship to other planets.

Content Standard: Global Awareness and 21st Century Skills- Students should demonstrate how science and technology affect the quality of our lives.

Students Expected Performances:

Understand how advances in instruments and technology extend our senses.

Explain how a camera works, and how it relates to the human eye.

GRADE 5

READING

Students comprehend and respond in literal, critical and evaluative ways to various texts that are read, viewed and heard.

State Framework	Grade-Level Expectations	Assessments
<p>1. Reading and Responding Students read, comprehend and respond in individual, literal, critical and evaluative ways to literary, informational and persuasive texts in multimedia formats.</p> <p>1.3 Students select and apply strategies to facilitate word recognition and develop vocabulary in order to comprehend text.</p>	<p style="text-align: center;">Vocabulary</p> <ol style="list-style-type: none">1. Use prior knowledge, context clues and graphic features to predict, clarify, and/or expand word meanings and concepts.2. Use structural analysis to understand new words and concepts.3. Use dictionaries, thesauruses, and glossaries to find or confirm word meanings, pronunciations, syllabication, synonyms, antonyms and parts of speech.	

GRADE 5

READING

Students comprehend and respond in literal, critical and evaluative ways to various texts that are read, viewed and heard.

State Framework	Grade-Level Expectations	Assessments
<p>1. Reading and Responding</p> <p>1.1 Students use appropriate strategies before, during and after reading in order to construct meaning.</p> <p>1.2 Students interpret, analyze and evaluate text in order to extend understanding and appreciation.</p> <p>2. Exploring and Responding to Literature</p> <p>Students read and respond to classical and contemporary texts from many cultures and literary periods.</p> <p>2.1 Students recognize how literary devices and conventions engage the reader.</p> <p>2.2 Students explore multiple responses to literature.</p> <p>2.3 Students recognize and appreciate that contemporary and classical literature has shaped human thought.</p> <p>2.4 Students recognize that reads and authors are influences by individual, social, cultural and historical contexts.</p>	<p style="text-align: center;">Reading Comprehension</p> <p style="text-align: center;"><i>Students will independently accomplish all before, during and after comprehension grade-level expectations. Teachers will continue to spiral all previous grade-level expectations. Students will read, view, listen to and write about a variety of fiction and nonfiction contemporary, classical, multicultural and culturally relevant texts in all content areas. Teachers will be culturally responsive to students. Students will provide evidence from text to support all oral, written and presented responses about text.</i></p> <p style="text-align: center;">Before and During Reading</p> <p>4. Synthesize using multiple strategies/multiple sources for new insight, e.g., Visualizing, Think-Aloud, Question-Answer Relationship, List-Group-Label.</p> <p>5. Determine the importance of ideas (main ideas, details and themes) in text.</p> <p>6. Use cueing system and context clues to determine meanings of words.</p> <p>7. Make inferences based on implicit and explicit information in the text; provide justification for those inferences.</p>	<p>DRP</p> <p>CMT Reading Comprehension</p> <p>A4 Use information from the text to make predictions based on what is read.</p> <p>A5 Use context clues to determine meanings of unknown or multiple-meaning words or figurative language.</p>

GRADE 5

READING

Students comprehend and respond in literal, critical and evaluative ways to various texts that are read, viewed and heard.

State Framework	Grade-Level Expectations	Assessments
<p>1. Reading and Responding</p> <p>1.1</p> <p>1.2</p> <p>1.4 Students communicate with others to create interpretations of written, oral and visual texts.</p> <p>2. Exploring and Responding to Literature</p> <p>2.1</p> <p>2.2</p> <p>2.3</p> <p>2.4</p>	<p>After Reading — CMT Strands Highlighted Below</p> <p>General Understanding</p> <p>8. Identify recurring themes in literature, including books by the same author, e.g., friendship, conflict.</p> <p>9. Use knowledge of the situation, characters’ actions, motivations, feelings, and physical attributes to determine characters’ traits.</p> <p>10. Discuss and analyze how characters in text deal with conflicts of human experience, relating to real life situations.</p> <p>11. Summarize the major actions that define the plot and how actions lead to conflict or resolution.</p> <p>12. Explain the influence of setting on character and plot.</p> <p>13. Identify the narrator and explain which point of view is used in the text.</p> <p>14. Explain how a story would change if a different character narrated it.</p>	<p>CMT Reading Comprehension</p> <p>A1 Determine the main idea (nonfiction) theme (fiction) the text.</p> <p>A2 Identify or infer important characters, problems, settings, events, relationships and details.</p> <p>A3 Select and use relevant information from the text in order to summarize events and/or ideas in the text.</p> <p>A4 Use information from the text to make predictions based on what is read.</p>

GRADE 5

READING

Students comprehend and respond in literal, critical and evaluative ways to various texts that are read, viewed and heard.

State Framework	Grade-Level Expectations	Assessments
	<p>Developing an Interpretation</p> <p>15. <i>Follow multistep directions in a procedural text and explain and/or follow the process.</i></p> <p>16. Explain the characteristics of various genres.</p> <p>17. Compare and contrast ideas, themes and/or issues across texts, and across texts representing multicultural experiences.</p> <p>18. Compare and contrast the same conflict from the point of view of two different characters.</p> <p>19. Explain how specific text features help you understand a selection, e.g., how a chapter heading helps you think about the chapter, how boldface or italics signals a new term that can be found in the glossary.</p> <p>20. Explain similarities and differences within and among multiple cultures or historical periods, e.g., marriage customs or family vs. community responsibilities.</p> <p>21. Explain how personal beliefs and values influence the interpretation of text.</p> <p>22. Find similarities and differences within and between texts using text-based evidence, e.g., character’s point of view in poetry and narrative; the author’s feelings and the poet’s feelings; cultural perspectives in a magazine article and an editorial.</p> <p>Making Reader/Text Connections</p> <p>23. Take a position regarding a topic/issue.</p> <p>24. Evaluate the quality and value of text.</p> <p>25. Connect current issues, information from other texts, and personal experiences to characters, events and information.</p>	<p>B1 Identify or infer the author’s use of structure/organizational patterns.</p> <p>B2 Draw conclusions about the author’s purpose for choosing genres or including or omitting specific details in the text.</p> <p>B3 Use stated or implied evidence from the text to draw and/or support a conclusion.</p> <p>C1 Make connections between the text and outside experiences and knowledge.</p> <p>C2 Select, synthesize and/or use relevant information within the text to write a personal response to the text.</p>

GRADE 5

READING

Students comprehend and respond in literal, critical and evaluative ways to various texts that are read, viewed and heard.

State Framework	Grade-Level Expectations	Assessments
	<p>Content and Structure</p> <ul style="list-style-type: none"> 26. Understand how the author’s experience and beliefs influence text. 27. Recognize author’s perspective, e.g., opinion about an idea, stand on an issue, perspective on a topic, and cite supporting literary/narrative text details or information text facts. 28. Understand the social and cultural perspective from which the author writes and how that contributes to the text. 29. Examine and determine the validity of sources of information. 30. Explain how information in a text could be used to solve a problem and cite text-based examples, e.g., use information from an article about when fruits and vegetables are in season to save money at the grocery store. 	<ul style="list-style-type: none"> D1 Analyze and evaluate the author’s craft including use of literary devices and textual elements D2 Select, synthesize and/or use relevant information within the texts to extend or evaluate the texts. D3 Demonstrate an awareness of an author’s or character’s values, customs and beliefs included in the text.
<ul style="list-style-type: none"> 1. Reading and Responding <ul style="list-style-type: none"> 1.1 1.2 2. Exploring and Responding to Literature <ul style="list-style-type: none"> 2.1 2.2 	<p align="center">Reading Reflection / Behaviors</p> <ul style="list-style-type: none"> 31. Choose a variety of genres to read, hear, view and write for personal enjoyment. 32. Recommend books to others and explain the reason for the recommendation. 33. Set reading goals, create a plan to meet those goals, and monitor progress. 	

GRADE 5

ORAL LANGUAGE

Students will listen and speak to communicate ideas clearly.

State Framework	Grade-Level Expectations	Assessments
<p>1. Reading and Responding 1.4</p> <p>3. Communicating with Others Students produce written, oral and visual texts to express, develop and substantiate ideas and experiences.</p> <p>3.1 Students use descriptive, narrative, expository, persuasive and poetic modes.</p> <p>3.2 Students prepare, publish and/or present work appropriate to audience, purpose and task.</p> <p>4. Applying English Language Conventions Students apply the conventions of standard English in oral, written and visual communication.</p> <p>4.1 Students use knowledge of their language and culture to improve competency in English.</p> <p>4.2 Students speak and write using standard language structures and diction appropriate to audience and task.</p>	<p style="text-align: center;">Listening / Speaking</p> <ol style="list-style-type: none">1. Pose questions, listen to the ideas of others, and contribute own information and ideas in group discussions.2. Make oral presentations that show appropriate consideration of audience, purpose and information to be conveyed.3. Analyze how dialects are reflected in language styles of different groups (e.g. geographical or socially) and individuals.	

GRADE 5

WRITING

Students express, develop and substantiate ideas and experiences through their own writing and artistic and technical presentations.

State Framework	Grade-Level Expectations	Assessments
<p>1. Reading and Responding 1.4</p> <p>3. Communicating with Others 3.2</p> <p>4. Applying English Language Conventions 4.1 4.2 4.3 Students use standard English for composing and revising written text.</p>	<p style="text-align: center;">Spelling</p> <ol style="list-style-type: none">1. Use spelling rules and patterns from previous grades.2. Correctly spell high-frequency words.3. Use multiple strategies to spell. Examples:<ul style="list-style-type: none">▪ visual patterns, e.g., <i>-ion</i> endings▪ sound patterns, e.g., easily confused endings <i>-able/-ible, -ant/-ent</i>▪ affixes, e.g., <i>pre-, in-, un-, -ed, -ing, -graph</i>▪ rules, e.g., “i” before “e” rule▪ self-corrects spelling errors	

GRADE 5

WRITING

Students express, develop and substantiate ideas and experiences through their own writing and artistic and technical presentations.

State Framework	Grade-Level Expectations	Assessments
<p>1. Reading and Responding 1.4</p> <p>3. Communicating with Others 3.2</p> <p>4. Applying English Language Conventions 4.1 4.2 4.3</p>	<p style="text-align: center;">Capitalization /Punctuation / Usage</p> <ol style="list-style-type: none"> 4. Use capitalization, punctuation, and usage rules from previous grades. 5. Use standard and nonstandard English. 6. Capitalize brand names, e.g., <i>Nike</i>. 7. Capitalize geographic regions, e.g., <i>the West</i>. 8. Use periods in abbreviations, e.g., <i>pg., ft.</i>. 9. Uses commas to set off interjections, e.g., <i>Okay, if you say so</i>; or explanatory phrases, e.g., <i>They stood together, away from the pile of stones in the corner, and their voices were quiet.</i> 10. Use comma after date or address within text, e.g., <i>June 1, 1993, was an important day in my life.</i> 11. Use quotation marks in dialogue, e.g., <i>“How’s it going?” the boy asked.</i> 12. Use hyphen in numbers, e.g., <i>twenty-three</i>. 13. Use hyphens to join numbers, e.g., <i>pages 1-3; the Mariners won 17-6.</i> 14. Use ellipsis (...) to show omitted words and to show a pause. 15. Use semicolon between two independent clauses. 16. Use subject vs. object pronouns correctly, e.g., <i>I vs. me</i>. 17. Use new paragraphs to change speakers in dialogue. 18. Cite sources in research using a bibliographic format. 19. Use resources to find correct spelling for words identified as misspelled. 	<p>CMT Editing & Revising</p>

GRADE 5

WRITING

Students express, develop and substantiate ideas and experiences through their own writing and artistic and technical presentations.

State Framework	Grade-Level Expectations	Assessments
<p>3. Communicating with Others 3.1 3.2</p> <p>4. Applying English Language Conventions 4.1 4.2 4.3</p>	<p style="text-align: center;">Writing Process</p> <p>20. Plan: gather and organize information from multiple sources to address a topic, e.g., electronic graphic organizer, comparison or classification chart.</p> <p>21. Draft: complete draft demonstrating connections among ideas, supported by information gathered during planning stage.</p> <p>22. Revise: rework writing several times based on different points of focus, e.g., first reading — add details for elaboration; second reading — delete sentences or phrases to achieve paragraph unity; third reading — reorganize ideas for meaning.</p> <p>23. Edit: use multiple resources, e.g., dictionary, glossary, thesaurus, for proofreading and editing.</p> <p>Publish/Present:</p> <p>24. Publish and present final products, using a variety of technology, e.g., word processor, spreadsheet, multimedia, slideshow, publication software.</p> <p>25. Make purposeful decisions about format, graphics, illustrations, and other features, e.g., captioned photos, maps, based on audience.</p> <p>26. Publish for global audience.</p> <p>Reflect:</p> <p>27. Provides evidence that writing goals have been met, e.g., <i>My sentence fluency has improved because I now vary the beginnings of my sentences.</i></p> <p>28. Identifies professional authors’ styles and techniques, e.g., leads, conclusions, word choice, purpose, character and plot development; critiques peers’ writing and supports the opinion using established criteria, e.g., content, organization, style, conventions; explains strengths and weaknesses of own writing using criteria, e.g., rubrics and anchor papers, checklists, six-trait scoring guides; uses criteria to choose and defend choices for a writing portfolio.</p>	<p>CMT Writing: Expository/ Explanatory (compare and contrast)</p>

GRADE 5

WRITING

Students express, develop and substantiate ideas and experiences through their own writing and artistic and technical presentations.

State Framework	Grade-Level Expectations	Assessments
<p>3. Communicating with Others 3.1 3.2</p> <p>4. Applying English Language Conventions 4.1 4.2 4.3</p>	<p>Writing Genres, Traits and Crafts</p> <p>Descriptive: 29. Integrate descriptive writing into other modes, using literary techniques, e.g., flashback, specific word choice, character development.</p> <p>Narrative: 30. Write a biography based on an interview. 31. Write a historical fiction essay, using primary sources. 32. Write varied narratives with different beginnings and endings. 33. Write a story ending from the perspective of a different character.</p> <p>Expository: 34. Write an explanatory piece, building up to the most important point. 35. Write book reviews. 36. Write compare-contrast essay, using point-by-point structure.</p> <p>Persuasive: 37. Write a persuasive piece, using “if-and-then” structure. 38. Write a book or movie critique.</p> <p>Poetic: 39. Write a haiku. 40. Write a rap. 41. Write words to the music of an already existing song. 42. Write a ballad. 43. Write a lyrical poem. 44. Write a cacophony. 45. Include more than one form/genre in a single piece, e.g., a report about salmon that includes a poem, fact box and story. 46. Write a variety of sentence lengths; write a variety of sentence beginnings, e.g., starts with a participial phrase: <i>Laughing loudly, they walked down the hall</i>; write a variety of sentence structures, e.g., <i>Mike, busy with his homework, didn't hear the telephone ring. Although he wanted to keep working, Tran took the call. He kept it short</i>; write with a sense of rhythm, and may use fragments in dialogue as appropriate.</p>	<p>CMT Writing: Expository/ Explanatory (compare and contrast)</p>

GRADE 5

The study of events, documents, and people addressing the founding of the United States as a nation, with connections to Connecticut and local history, emphasizing how government works today, with the use of primary source materials.

Standard 1: Content Knowledge

Knowledge of concepts, themes, and information from history and social studies is necessary to promote understanding of our nation and our world.

Strand <i>Demonstrate an understanding of:</i>	Grade Level Expectations <i>Students will be able to:</i>	Correlations
1.1 – Significant events and themes in United States history.	<ol style="list-style-type: none"> 1. Explain how specific individuals and their ideas and beliefs influenced U.S. history (e.g. John Smith, Anne Hutchison, Uncas, Benjamin Franklin). 2. Compare and contrast the economic, political and/or religious differences that contributed to conflicts (e.g. French and Indian Wars, American Revolution). 3. Analyze how some conflicts have been resolved through compromise (e.g. U.S. Constitution, Northwest Ordinance). 4. Evaluate the relative influence of individual events that contributed to the American Revolution. 5. Explain the significance of the results achieved at the Constitutional Convention. 	<p>Critical Thinking and Problem Solving Skills Civic Literacy 1.1.1 NCSS 3 “People, Places, and Environments” 1.1.2 NCSS 1 “Culture” 1.1.2 NCSS 3 “People, Places, and Environments” 1.1.2 NCSS 7 “Production, Distribution, and Consumption” 1.1.3 NCSS 5 “Individuals, Groups, and Institutions” 1.1.4 NCSS 2 “Time, Continuity, and Change” 1.1.5 NCSS 6 “Power, Authority, and Governance” I&TL: 1, 2, 3, 5, 6</p>
1.2 – Significant events in local and Connecticut history and their connections to United States history.	<ol style="list-style-type: none"> 6. Explain the connections between local, state and national events (e.g. Connecticut Constitution, colonization, American Revolution, U.S. Constitution). 	<p>Critical Thinking and Problem Solving Skills Civic Literacy NCSS 2 “Time, Continuity, and Change” NCSS 3 “People, Places, and Environments” I&TL: 1, 2, 3, 5, 6</p>
1.3 – Significant events and themes in world history/international studies.	<ol style="list-style-type: none"> 7. Trace the evolving relationship between England and its American Colonies. 8. Compare the perspectives of England and the Colonies relative to the events preceding the American Revolution. 9. Compare and contrast the factors leading to Colonial settlement. 	<p>Critical Thinking and Problem Solving Skills Civic Literacy 1.3.7 NCSS 9 “Global Connections” 1.3.8 NCSS 2 “Time, Continuity, and Change” 1.3.8 NCSS 9 “Global Connections” 1.3.9 NCSS 2 “Time, Continuity, and Change”</p>

		I&TL: 1, 2, 3, 5, 6
1.4 – Geographical space and place.	<p>10. Compare and contrast the value of using local/regional/thematic maps to research early settlements in America.</p> <p>11. Examine the geographical/ topographical significance of the location of early American Colonial settlements (e.g. coastal areas, mountains, rivers, plains).</p>	<p>Critical Thinking and Problem Solving Skills 1.4.10 & 11 NCSS “People, Places, and Environments” I&TL: 3</p>
1.5 – Interaction of humans and the environment.	<p>12. Describe how early colonists had to adapt to their new environment (e.g. building materials, food).</p>	<p>Critical Thinking and Problem Solving Skills NCSS 3 “People, Places, and Environments” I&TL: 3</p>
1.6 – Patterns of human movement across time and place.	<p>13. Compare and contrast settlement patterns in specific areas of the 13 American Colonies.</p> <p>14. Analyze and assess factors that contributed to European migration.</p>	<p>Critical Thinking and Problem Solving Skills NCSS 2 “Time, Continuity and Change” NCSS 3 “People, Places, and Environments” I&TL: 3</p>
1.7 – The purpose, structures and functions of government and law at the local, state, national and international levels.	<p>15. Describe our national government’s purpose, structure and functions.</p> <p>16. Analyze how local, state and national governments share power in the United States.</p>	<p>Critical Thinking and Problem Solving Skills Civic Literacy NCSS 6 “Power, Authority, and Governance” I&TL: 3</p>
1.8 – The interactions between citizens and their government in the making and implementation of laws.	<p>17. Explain the process through which citizens can influence lawmaking in the United States (e.g. Colonial government, state constitution).</p>	<p>Critical Thinking and Problem Solving Skills Civic Literacy NCSS 6 “Power, Authority, and Governance” I&TL: 3</p>
1.9 – The rights and responsibilities of citizens.	<p>18. Demonstrate one’s rights and responsibilities as a citizen (e.g. voting, paying taxes, obeying laws).</p>	<p>Critical Thinking and Problem Solving Skills Civic Literacy NCSS 6 “Power, Authority, and Governance” I&TL: 3</p>
1.10 – How limited resources influence economic decisions.	<p>19. Explain that when resources vary, so does wealth and poverty.</p> <p>20. Analyze how businesses use limited resources to create goods and services.</p>	<p>Critical Thinking and Problem Solving Skills Financial Literacy NCSS 7 “Production, Distribution, and Consumption” I&TL: 3</p>
1.11 – How different economic systems organize resources.	<p>21. Demonstrate examples of disagreements between government and citizens regarding taxation</p>	<p>Critical Thinking and Problem Solving Skills NCSS 7 “Production, Distribution, and Consumption”</p>

		NCSS10 “Civic Ideals and Practices” I&TL: 3
1.12 – The interdependence of local, national and global economies.	22. Analyze how trade among colonists and with Native Americans in Connecticut affected each group.	Critical Thinking and Problem Solving Skills I&TL: 3
1.13 – The characteristics of and interactions among culture, social systems and institutions.	23. Compare and contrast different ethnic groups’ contributions to the community and the state (e.g. literature, the arts, politics, festivals, cuisine, museums).	Critical Thinking and Problem Solving Skills I&TL: 1, 2, 3, 5, 6

Standard 2: History/Social Studies Literacy

Competence in literacy, inquiry, and research skills is necessary to analyze, evaluate, and present history and social studies information.

Strand	Grade Level Expectations <i>Students will be able to:</i>	Correlations
2.1 – Access and gather information from a variety of primary and secondary sources including electronic media (maps, charts, graphs, images, artifacts, recordings and text).	<ol style="list-style-type: none"> 1. Locate and gather information from primary and secondary sources. 2. Answer questions about content gathered from print and non-print sources 3. Summarize information about primary and secondary sources 	Critical Thinking and Problem Solving Skills Information Literacy Communication RI5- 1, 2, 4, 7 W5- 7, 8 NCSS Appendix 1 “Critical Thinking Skills” I&TL: 1, 2, 3, 5, 6
2.2 – Interpret information from a variety of primary and secondary sources, including electronic media (e.g. maps, charts, graphs, images, artifacts, recordings and text).	<ol style="list-style-type: none"> 4. Describe an author’s point of view using relevant social studies information (e.g. editorials). 5. Compare and contrast information provided by primary and secondary sources. 6. Identify map symbols and map types (e.g. physical, political, economic products). 7. Interpret information from various map types using map symbols. 	Critical Thinking and Problem Solving Skills Information Literacy Communication RI5- 5, 6, 8 NCSS Appendix 1 “Literacy Skills” NCSS Appendix 1 “Critical Thinking Skills” I&TL: 1, 2, 3, 5, 6
2.3 – Create various forms of written work (e.g. journal, essay, blog, Web page, brochure) to demonstrate an understanding of history and social studies issues.	<ol style="list-style-type: none"> 8. Create written work (e.g. historical fiction essays) using primary sources (e.g. newspaper article, formal essay, poetry, play). 9. Organize information in outlines and graphic organizers. 	Critical Thinking and Problem Solving Skills Information Literacy Communication RI5- 9 W5- 2, 4, 6, 10 2.3.6 NCSS Appendix 1 “Literacy Skills” 2.3.7 NCSS Appendix 1 “Critical Thinking Skills” I&TL: 1, 2, 3, 4, 5, 6, 7
2.4 – Demonstrate an ability to participate in	10. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and	Critical Thinking and Problem Solving Skills

<p>social studies discourse through informed discussion, debate and effective oral presentation.</p>	<p>teacher-led) with diverse partners on social studies topics and texts, building on others' ideas and expressing their own clearly.</p> <p>11. Debate conflicting points of view on historical issues or events using evidence.</p> <p>12. Give oral presentations on social studies events or issues and use evidence from more than one source.</p>	<p>Information Literacy Communication SL4- 1, 4 NCSS Appendix 1 "Personal Interaction and Civic Engagement Strategies (PICES) I&TL: 1, 2, 3, 4, 5, 6, 7</p>
<p>2.5 – Create and present relevant social studies materials using both print and electronic media (e.g. maps, charts, models, displays).</p>	<p>13. Include multimedia components (e.g. graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.</p>	<p>Critical Thinking and Problem Solving Skills Information Literacy ITC Literacy Communication SL5- 5 NCSS Appendix 1 "Critical Thinking Skills" I&TL: 1, 2, 3, 4, 5, 6, 7</p>

Standard 3: Civic Engagement

Civic competence in analyzing historical issues and current problems requires the synthesis of information, skills, and perspective.

<p>Strand</p>	<p>Grade Level Expectations <i>Students will be able to:</i></p>	<p>Correlations</p>
<p>3.1 – Use evidence to identify, analyze and evaluate historical interpretations.</p>	<p>1. Identify and explain different points of view about a historical event (cause and effect).</p> <p>2. Make and support judgments about the quality of information in text material.</p>	<p>Critical Thinking and Problem Solving Skills Information Literacy Communication NCSS Appendix 1 "Literacy Skills" I&TL: 1, 2, 3, 5, 6</p>
<p>3.2 – Analyze and evaluate human action in historical and/or contemporary contexts from alternative points of view.</p>	<p>3. Analyze why people might have different points of view on a national contemporary issue.</p> <p>4. Describe views and feelings of people in the past (e.g. slavery, Colonial reaction to British regulations and taxes) using personal experience and/or outside readings.</p>	<p>Critical Thinking and Problem Solving Skills Information Literacy Communication 3.2.3 NCSS Appendix 1 "Literacy Skills" 3.2.4 NCSS Appendix 1 "Critical Thinking Skills" I&TL: 1, 2, 3, 5, 6</p>
<p>3.3 - Apply appropriate historical, geographic, political, economic and cultural concepts and methods in proposing and evaluating solutions to contemporary problems.</p>	<p>5. Predict how a current issue or event might affect one's life.</p> <p>6. Assess the potential impact of proposed solutions to contemporary issues.</p>	<p>Critical Thinking and Problem Solving Skills Communication NCSS Appendix 1 "Learning Strategies" I&TL: 1, 2, 3, 5, 6</p>

STAMFORD PUBLIC SCHOOLS
MATHEMATICS GRADE-LEVEL STANDARDS AND EXPECTATIONS*
KINDERGARTEN – GRADE EIGHT

GRADE 5

Numerical and Proportional Reasoning

Place Value

- Identify, round, order and compare whole numbers (to 1,000,000) and extend to decimals using models and number lines.
- Compose and decompose numbers and use the numbers to support computational strategies.
- Solve problems involving finding 10, 100 and 1000 more and less than a number.
- Develop strategies using place value relationships, inverse operation, and commutative, associative and distributive properties, to simplify computations with 2-, 3-, and 4-digit numbers and money amounts.

Number Sense

- Estimate products and missing factors (quotients) using multiples of 10, 100 and 1000.
- Use rectangular arrays to identify factor pairs and to classify numbers as prime, composite and perfect squares.
- Explore divisibility rules, and patterns with remainders.
- Use benchmarks to approximate locations on number lines and coordinate grids.
- Introduce the concept of integers with practical applications and on number lines.
- Use estimation to predict when an answer is or is not reasonable or if it results in an over- or under-estimate.
- Write story problems from multiplication and division number sentences using 1 and 2-digit numbers.

Fractions, Decimals and Ratios

- Describe the magnitude of and round mixed numbers, fractions and decimals.
- Represent a rational number in its equivalent fraction, decimal, and percent form with models and number patterns.
- Use equivalence and substitution with common denominators when adding and subtracting fractions, decimals, and mixed numbers with like and unlike denominators.
- Construct and use models and pictorial representations to multiply common fractions and mixed numbers.
- Find fractional parts of a set of objects.
- Use ratios to solve practical problems such as interpreting maps and scale drawings

Geometry and Measurement

Geometry

- Use geometric relationships (such as parallel, perpendicular and congruence) to describe the attributes of sets and subsets of shapes and solids.
- Identify and draw lines of symmetry.
- Explore the relationship between area and perimeter when the dimensions of a polygon change.
- Develop formulas to find the perimeter and area of squares, rectangles (and triangles), and develop strategies to determine the volume of rectangular prisms.
- Plot positive points on the rectangular coordinate system.

Measurement

- Solve problems involving conversion of measure within customary and metric systems, including time and elapsed time.
- Estimate and choose appropriate units and tools to measure and solve problems involving length, perimeter, area, volume.

**STAMFORD PUBLIC SCHOOLS
MATHEMATICS GRADE-LEVEL STANDARDS AND EXPECTATIONS*
KINDERGARTEN – GRADE EIGHT**

Working With Data: Probability and Statistics

Working With Data

- Construct and identify correct information and draw conclusions from line plots, bar graphs, circle graphs, and stem and leaf plots.
- Design and conduct surveys and samplings to collect data that represent a general population.
- Sort or classify objects and draw logical conclusions from data, including Venn diagrams and transitive reasoning questions.

Probability and Statistics

- Identify possible outcomes and express the likelihood of events as a fraction.
- Design and conduct probability experiments to make and test predictions of probability and fairness.
- Make and test predictions of probability and fairness.

Algebraic Reasoning: Patterns and Functions

- Represent geometric and numeric patterns using words, tables, graphs and equations.
- Extend and analyze arithmetic and geometric sequences and data to make generalizations and predictions.
- Solve one-step equations.
- Recognize that a change in one variable may relate to a change in another variable.
- Use patterns, models, and relationships as context for writing and solving simple expressions, equations, and inequalities.
- Develop an understanding of 'order of operations'.



EVERYDAY MATHEMATICS

GRADE 5 GRADE-LEVEL GOALS

Content Strand: Number and Numeration		
Grade-Level Goals	Content Thread	Program Goal
Goal 1 Read and write whole numbers and decimals; identify places in such numbers and the values of the digits in those places; use expanded notation to represent whole numbers and decimals.	<i>Place value and notation</i>	Understand the Meanings, Uses, and Representations of Numbers
Goal 2 Solve problems involving percents and discounts; describe and explain strategies used; identify the unit whole in situations involving fractions.	<i>Meanings and uses of fractions</i>	
Goal 3 Identify prime and composite numbers; factor numbers; find prime factorizations.	<i>Number theory</i>	
Goal 4 Use numerical expressions involving one or more of the basic four arithmetic operations, grouping symbols, and exponents to give equivalent names for whole numbers; convert between base-10, exponential, and repeated-factor notations.	<i>Equivalent names for whole numbers</i>	Understand Equivalent Names for Numbers
Goal 5 Use numerical expressions to find and represent equivalent names for fractions decimals, and percents; use and explain multiplication and division rules to find equivalent fractions and fractions in simplest form; convert between fractions and mixed numbers; convert between fractions, decimals, and percents.	<i>Equivalent names for fractions, decimals, and percents</i>	
Goal 6 Compare and order whole numbers up to 1,000,000,000 and decimals through thousandths; compare and order integers between -100 and 0; use area models, benchmark fractions, and analyses of numerators and denominators to compare and order fractions.	<i>Comparing and ordering numbers</i>	Understand Common Numerical Relations



EVERYDAY MATHEMATICS

GRADE 5 GRADE-LEVEL GOALS

Content Strand: Operations and Computation		
Grade-Level Goals	Content Thread	Program Goal
Goal 1 Use mental arithmetic, paper-and-pencil algorithms, and calculators to solve problems involving the addition and subtraction of whole numbers, decimals, and signed numbers; describe the strategies used and explain how they work.	<i>Addition and subtraction procedures</i>	Computes Accurately
Goal 2 Demonstrate automaticity with multiplication facts and proficiency with division facts and extensions.	<i>Multiplication and division facts</i>	
Goal 3 Use mental arithmetic, paper-and-pencil algorithms, and calculators to solve problems involving the multiplication of whole numbers and decimals and the division of multidigit whole numbers and decimals by whole numbers; express remainders as whole numbers or fractions as appropriate; describe the strategies used and explain how they work.	<i>Multiplication and division procedures</i>	
Goal 4 Use mental arithmetic, paper-and-pencil algorithms, and calculators to solve problems involving the addition and subtraction of fractions and mixed numbers; describe the strategies used and explain how they work.	<i>Procedures for addition and subtraction of fractions</i>	
Goal 5 Use area models, mental arithmetic, paper-and-pencil algorithms, and calculators to solve problems involving the multiplication of fractions and mixed numbers; use diagrams, a common-denominator method, and calculators to solve problems involving the division of fractions; describe the strategies used.	<i>Procedures for multiplication and division of fractions</i>	
Goal 6 Make reasonable estimates for whole number and decimal addition, subtraction, multiplication, and division problems and fraction and mixed number addition and subtraction problems; explain how the estimates were obtained.	<i>Computational estimation</i>	Make Reasonable Estimates
Goal 7 Use repeated addition, arrays, area, and scaling to model multiplication and division; use ratios expressed as words, fractions, percents, and with colons; solve problems involving ratios of parts of a set to the whole set.	<i>Models for the operations</i>	Understand Meanings of Operations



EVERYDAY MATHEMATICS

GRADE 5 GRADE-LEVEL GOALS

Content Strand: Data and Chance		
Grade-Level Goals	Content Thread	Program Goal
Goal 1 Collect and organize data or use given data to create bar, line, and circle graphs with reasonable titles, labels, keys, and intervals.	<i>Data collection and representation</i>	Select and Create Appropriate Graphical Representations of Collected or Given Data
Goal 2 Use the maximum, minimum, range, median, mode, and mean and graphs to ask and answer questions, draw conclusions, and make predictions.	<i>Data analysis</i>	Analyze and Interpret Data
Goal 3 Describe events using <i>certain, very likely, likely, unlikely, very unlikely, impossible</i> and other basic probability terms; use <i>more likely, equally likely, same chance, 50-50, less likely</i> , and other basic probability terms to compare events; explain the choice of language.	<i>Qualitative probability</i>	Understand and Apply Basic Concepts of Probability
Goal 4 Predict the outcomes of experiments, test the predictions using manipulatives, and summarize the results; compare predictions based on theoretical probability with experimental results; use summaries and comparisons to predict future events; express the probability of an event as a fraction, decimal, or percent.	<i>Quantitative probability</i>	



EVERYDAY MATHEMATICS

GRADE 5 GRADE-LEVEL GOALS

Content Strand: Measurement and Reference Frames		
Grade-Level Goals	Content Thread	Program Goal
Goal 1 Estimate length with and without tools; measure length with tools to the nearest 1/8 inch and millimeter; estimate the measure of angles with and without tools; use tools to draw angles with given measures.	<i>Length, weight, and angles</i>	Understand the Systems and Processes of Measurement; Use Appropriate Techniques, Tools, Units, and Formulas in Making Measurements
Goal 2 Describe and use strategies to find the perimeter of polygons and the area of circles; choose and use appropriate formulas to calculate the areas of rectangles, parallelograms, and triangles, and the volume of a prism; define <i>pi</i> as the ratio of a circle's circumference to its diameter.	<i>Area, perimeter, volume, and capacity</i>	
Goal 3 Describe relationships among U.S. customary units of length; among metric units of length; and among U.S. customary units of capacity.	<i>Units and systems of measurement</i>	
Goal 4 Use ordered pairs of numbers to name, locate, and plot points in all four quadrants of a coordinate grid.	<i>Coordinate systems</i>	Use and Understand Reference Frames



EVERYDAY MATHEMATICS

GRADE 5 GRADE-LEVEL GOALS

Content Strand: Geometry		
Grade-Level Goals	Content Thread	Program Goal
Goal 1 Identify, describe, compare, name, and draw right, acute, obtuse, straight, and reflex angles; determine angle measures in vertical and supplementary angles and by applying properties of sums of angle measures in triangles and quadrangles.	<i>Lines and angles</i>	Investigate Characteristics and Properties of Two- and Three-Dimensional Geometric Shapes
Goal 2 Describe, compare, and classify plane and solid figures using appropriate geometric terms; identify congruent figures and describe their properties.	<i>Plane and solid figures</i>	
Goal 3 Identify, describe, and sketch examples of reflections, translations, and rotations.	<i>Transformations and symmetry</i>	Apply Transformations and Symmetry in Geometric Situations



EVERYDAY MATHEMATICS

GRADE 5 GRADE-LEVEL GOALS

Content Strand: Patterns, Functions, and Algebra		
Grade-Level Goals	Content Thread	Program Goal
Goal 1 Extend, describe, and create numeric patterns; describe rules for patterns and use them to solve problems; write rules for functions involving the four basic arithmetic operations; represent functions using words, symbols, tables, and graphs and use those representations to solve problems.	<i>Patterns and functions</i>	Understand Patterns and Functions
Goal 2 Determine whether number sentences are true or false; solve open number sentences and explain the solutions; use a letter variable to write an open sentence to model a number story; use a pan-balance model to solve linear equations with one unknown.	<i>Algebraic notation and solving number sentences</i>	Use Algebraic Notation to Represent and Analyze Situations and Structures
Goal 3 Evaluate numeric expressions containing grouping symbols and nested grouping symbols; insert grouping symbols and nested grouping symbols to make number sentences true; describe and use the precedence of multiplication and division over addition and subtraction.	<i>Order of operations</i>	
Goal 4 Describe and apply properties of arithmetic.	<i>Properties of the arithmetic operations</i>	

Connecticut Mastery Test – Fourth Generation

Mathematics Grade 5 Test Blueprint

<i>Content Standards and Strands</i>	# of multiple-choice items	# of open-ended items	# of grid-in items
Numerical and Proportional Reasoning			
1. Place Value	6		
2. Pictorial Representations of Numbers	4	2	
3. Equivalent Fractions, Decimals and Percents	4		
4. Order, Magnitude and Rounding of Numbers	7	1	
5. Models for Operations	4	2	
6. Basic Facts			6
7. Computation with Whole Numbers and Decimals	2		4
8. Computation with Fractions and Integers	6		
9. Solve Word Problems	4		2
10. Numerical Estimation Strategies	6		
11. Estimating Solutions to Problems	4		
12. Ratios and Proportions	NT	NT	NT
13. Computation with Percents	NT	NT	NT
Geometry and Measurement			
14. Time	4		
15. Approximating Measures	6		
16. Customary and Metric Measures	3	2	1
17. Geometric Shapes and Properties	2	2	
18. Spatial Relationships	2	1	
Working with Data: Probability and Statistics			
19. Tables, Graphs and Charts	2	2	
20. Statistics and Data Analysis	2	1	
21. Probability	4	1	
24. Classification and Logical Reasoning	2	2	
Algebraic Reasoning: Patterns and Functions			
22. Patterns	2	2	
23. Algebraic Concepts	4		
Integrated Understandings			
25. Mathematical Applications		2	
TOTAL	80	20	13

* NT = Strand not tested at this grade level.

Connecticut Mastery Test – Fourth Generation Mathematics Grade 5 Content

Strand	Grade 5 Concepts/Skills Assessed
1. Place Value	<ul style="list-style-type: none"> A. Solve problems involving 100 MORE/LESS or 1,000 MORE/LESS than a given number. B. Identify alternative forms of expressing whole numbers <10,000 using expanded notation. C. Identify alternative forms of expressing whole numbers <10,000 using regrouping. D. Use place value concepts to identify and compare the magnitude and value of digits in numbers.
2. Pictorial Representation of Numbers	<ul style="list-style-type: none"> A. Relate decimals (0.01-2.99) to pictorial representations and vice versa. B. Relate fractions and mixed numbers to pictures and vice versa. C. Identify and/or shade fractional parts of regions, sets or mixed numbers in pictures.
3. Equivalent Fractions, Decimals and Percents	<ul style="list-style-type: none"> A. Rename equivalent fractions. B. Rename equivalent mixed numbers as improper fractions and vice versa.
4. Order, Magnitude and Rounding of Numbers	<ul style="list-style-type: none"> A. Order whole numbers <100,000. B. Order mixed numbers, fractions and decimals. C. Describe magnitude of whole numbers <100,000 and decimals. D. Describe magnitude of mixed numbers and fractions. E. Round whole numbers in context. F. Round decimals. G. Locate points (fractions, decimals and whole numbers) on number lines and scales.
5. Models for Operations	<ul style="list-style-type: none"> A. Identify the appropriate operation or number sentence to solve a story problem. B. Write story problems from multiplication or division number sentences, using 1- and 2-digit numbers.
6. Basic Facts	<ul style="list-style-type: none"> A. Multiply and divide facts.
7. Computation with Whole Numbers and Decimals	<ul style="list-style-type: none"> A. Add and subtract 2-, 3- and 4-digit whole numbers and money amounts less than \$100. B. Multiply and divide multiples of 10 and 100 by 10 and 100. C. Multiply and divide 2- and 3-digit whole numbers and money amounts less than \$10 by 1-digit numbers.
8. Computation with Fractions and Integers	<ul style="list-style-type: none"> A. Add and subtract fractions and mixed numbers with like denominators.
9. Solve Word Problems	<ul style="list-style-type: none"> A. Solve one-step story problems involving whole numbers and money amounts with or without extraneous information. Use all operations. B. Solve two-step story problems involving whole numbers and money amounts with or without extraneous information.
10. Numerical Estimation Strategies	<ul style="list-style-type: none"> A. Identify the best expression to find an estimate. B. Identify whether and why a particular strategy will result in an overestimate or an underestimate.

Strand	Grade 5 Concepts/Skills Assessed
11. Estimating Solutions to Problems	A. Identify a reasonable estimate to a problem, including estimating change.
12. Ratios and Proportions	Not tested
13. Computation with Percents	Not tested
14. Time	A. Solve problems involving elapsed time (a.m. and p.m.). B. Solve problems involving conversions of measures of time (minutes, hours and days).
15. Approximating Measures	A. Estimate lengths and areas.
16. Customary and Metric Measures	A. Measure lengths to the nearest quarter-inch or half-centimeter. B. Measure and determine perimeters and areas. C. Identify appropriate customary or metric units of measure (length, capacity and mass) for a given situation. D. Solve problems involving conversions of measures of length.
17. Geometric Shapes and Properties	A. Identify, describe and/or classify 2-dimensional geometric shapes and figures. B. Draw, describe and/or classify 2-dimensional geometric shapes and figures.
18. Spatial Relationships	A. Identify lines of symmetry. B. Draw lines of symmetry. C. Identify congruent figures. D. Locate points on grids.
19. Tables, Graphs and Charts	A. Identify correct information from tables, bar graphs, pictographs and charts. B. Create bar graphs and pictographs from data in tables and charts.
20. Statistics and Data Analysis	A. Draw reasonable conclusions from data in tables, bar graphs, pictographs, circle graphs and charts. B. State a conclusion and explain why a claim is or is not reasonable, based on the data.
21. Probability	A. Identify correct solutions to problems involving elementary notions of probability and fairness. B. Solve problems involving elementary notions of probability and fairness, including justifying solutions.
22. Patterns	A. Identify the missing terms in a pattern, or identify rules for a given pattern using whole numbers and attributes. B. Extend or complete patterns and state rules for given patterns using whole numbers and attributes.
23. Algebraic Concepts	A. Solve simple one-step algebraic equations involving addition, subtraction, multiplication and fact families.
24. Classification and Logical Reasoning	A. Solve logic, counting and classification problems involving the organization of data. B. Sort or classify objects and draw logical conclusions from data, including Venn diagrams and transitive reasoning questions.
25. Mathematical Applications	A. Solve extended numerical, statistical and spatial problems.

Common Core State Standards for Mathematics

Grade 5

Domains	Operations and Algebraic Thinking	Number & Operations in Base Ten	Number & Operations: <i>Fractions</i>	Measurement and Data	Geometry
Clusters	<ul style="list-style-type: none"> Write and interpret numerical expressions Analyze patterns and relationships 	<ul style="list-style-type: none"> Understand the place value system Perform operations with multi-digit whole numbers and with decimals to hundredths 	<ul style="list-style-type: none"> Use equivalent fractions as a strategy to add and subtract fractions Apply and extend previous understandings of multiplication and division to multiply and divide fractions 	<ul style="list-style-type: none"> Convert like measurement units within a given measurement system Represent and interpret data Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition 	<ul style="list-style-type: none"> Graph points on the coordinate plane to solve real-world and mathematical problems Classify two-dimensional figures into categories based on their properties
Mathematical Practices	<ol style="list-style-type: none"> Make sense of problems and persevere in solving them. Reason abstractly and quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. 				

In Grade 5, instructional time should focus on three critical areas:

- 1. Developing fluency with addition and subtraction of fractions, developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions)**

 - Students apply their understanding of fractions and fraction models to represent the addition and subtraction of fractions with unlike denominators as equivalent calculations with like denominators. They develop fluency in calculating sums and differences of fractions, and make reasonable estimates of them. Students also use the meaning of fractions, of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for multiplying and dividing fractions make sense. (Note: this is limited to the case of dividing unit fractions by whole numbers and whole numbers by unit fractions.)
- 2. Extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operation**

 - Students develop understanding of why division procedures work based on the meaning of base-ten numerals and properties of operations. They finalize fluency with multi-digit addition, subtraction, multiplication, and division. They apply their understandings of models for decimals, decimal notation, and properties of operations to add and subtract decimals to hundredths. They develop fluency in these computations, and make reasonable estimates of their results. Students use the relationship between decimals and fractions, as well as the relationship between finite decimals and whole numbers (i.e., a finite decimal multiplied by an appropriate power of 10 is a whole number), to understand and explain why the procedures for multiplying and dividing finite decimals make sense. They compute products and quotients of decimals to hundredths efficiently and accurately.
- 3. Developing understanding of volume**

 - Students recognize volume as an attribute of three-dimensional space. They understand that volume can be quantified by finding the total number of same-size units of volume required to fill the space without gaps or overlaps. They understand that a 1-unit by 1-unit by 1-unit cube is the standard unit for measuring volume. They select appropriate units, strategies, and tools for solving problems that involve estimating and measuring volume. They decompose three-dimensional shapes and find volumes of right rectangular prisms by viewing them as decomposed into layers of arrays of cubes. They measure necessary attributes of shapes in order to solve real world and mathematical problems.