6-8 Literacy and Math
NYS COMMON CORE STANDARDS
Applicable to Art Lessons

Compiled by Dr. Susan Lane
slane@clydesavannah.org
2014

Artwork serves as a venue for building visual literacy, to understand the meaning of images, understanding how an artist communicates ideas with objects, elements, organizational principles, media, and techniques. When Reading and Writing Standards are seen as pertaining to visual literacy, *reading* text or *writing* can be interpreted as *reading* art or *communicating* through art. For instance:

- *text* can also mean *artwork*
- *details* can also mean the *elements* or *objects* contained within the artwork
- *phrases* can refer to *organizational principles* used to create the artwork

College & Career Readiness Anchor Standards for Reading 6-8	**6-8 READING STANDARDS for Literacy in Science & Technical Subjects(RST)** Proper way to cite a standard: Category.Grade level.Number for specific standard. For example: RL.6.1
Key Ideas and Details	
1. Read closely to determine what the text (artwork) says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text (artwork).	6-8: Cite specific textual evidence to support analysis of science and technical texts (artwork).
2. Determine central ideas or themes of a text (an artwork) and analyze their development; summarize the key supporting details and ideas.	6-8: Determine the central ideas or conclusions of a text (an artwork); provide an accurate summary of the text distinct from prior knowledge or opinions.
3. Analyze how and why individuals, events, or ideas develop and interact over the course of a text (within an artwork).	6-8: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks (or creating art).
Craft and Structure	
4. Interpret words and phrases as they are used in a text (an artwork), including determining technical, connotative, and figurative meanings, and analyze how specific word (image, element, and design principle) choices shape meaning or tone.	6-8: Determine the meaning of symbols, key terms, and other domain-specific words and phrases (image, element, and design principles) as they are used in a specific scientific or technical context relevant to *grades 6–8 texts and topics*.
5. Analyze the structure of texts (artwork), including how specific sentences, paragraphs, and larger portions of the text (images, objects, elements, design principles and techniques) relate to each other and the whole.	6-8: Analyze the structure an author (artist) uses to organize a text (an artwork), including how the major sections contribute to the whole and to an understanding of the topic.
6. Assess how point of view or purpose shapes the content and style of a text (an artwork).	6-8: Analyze the author's (artist's) purpose in providing an explanation, describing a procedure, or discussing an experiment in a text (an artwork).
Integration of Knowledge and Ideas	
7. Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words.*	6-8: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
8. Delineate and evaluate the argument and specific claims in a text (or in an artwork), including the validity of the reasoning as well as the relevance and sufficiency of the evidence.	6-8: Distinguish among facts, reasoned judgment based on research findings, and speculation in a text (or artwork).
9. Analyze how two or more texts (works of art) that address similar themes or topics in order to build knowledge or to compare the approaches the authors (artists) take.	6-8: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

Range of Reading and Level of Text Complexity	
10. Read and comprehend complex literary and informational texts (artwork) independently and proficiently.	6-8: By the end of grade 8, read and comprehend science/technical texts (artwork) in the grades 6–8 text complexity band independently and proficiently.

College & Career Readiness Anchor Standards for Writing 6-8	6-8 WRITING Standards for Literacy in Science & Technical Subjects (WST) Proper way to cite a standard: Category.Grade level.Number for specific standard. For example: WST.6.1
Text Types and Purposes	
1. Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.	6-8: Write arguments focused on *discipline-specific content.* a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically. b. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources. c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. d. Establish and maintain a formal style. e. Provide a concluding statement or section that follows from and supports the argument presented.
2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.	6-8: Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. b. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples. c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts. d. Use precise language and domain-specific vocabulary to inform about or explain the topic. e. Establish and maintain a formal style and objective tone. f. Provide a concluding statement or section that follows from and supports the information or explanation presented.
3. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details and well-structured event sequences.	6-12: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.

Production and Distribution of Writing	
4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	6-12: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.	6-8: With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.
6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.	6-8: Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently. 9-10: Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.
Research to Build and Present Knowledge	
7. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.	6-8: Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
8. Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.	6-8: Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
9. Draw evidence from literary or informational texts to support analysis, reflection, and research.	6-12: Draw evidence from informational texts to support analysis, reflection, and research.
Range of Writing	
10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.	6-12: Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

College & Career Readiness Anchor Standards for Speaking and Listening 6-8	**6-8 Speaking and Listening Standards (SL)** Proper way to cite a standard: Category.Grade level.Number for specific standard. For example: SL.6.1
Comprehension and Collaboration	
1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.	6: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 6 topics, texts, and issues*, building on others' ideas and expressing their own clearly. a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed. c. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion. d. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing. e. Seek to understand and communicate with individuals from different perspectives and cultural backgrounds. 7: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 7 topics, texts, and issues*, building on others' ideas and expressing their own clearly. a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed. c. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed. d. Acknowledge new information expressed by others and, when warranted, modify their own views. e. Seek to understand other perspectives and cultures and communicate effectively with audiences or individuals from varied backgrounds. 8: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 8 topics, texts, and issues*, building on others' ideas and expressing their own clearly. a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Follow rules for collegial discussions and decision-making, track progress toward specific goals and deadlines, and define individual roles as needed. c. Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas. d. Acknowledge new information expressed by others, and, when warranted, qualify or justify their own views in light of the evidence presented. e. Seek to understand other perspectives and cultures and communicate effectively with audiences or individuals from varied backgrounds.
2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.	6: Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study. a. Use their experience and their knowledge of language and logic, as well as culture, to think analytically, address problems creatively, and advocate persuasively 7: Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study. a. Use their experience and their knowledge of language and logic, as well as culture, to think analytically, address problems creatively, and advocate persuasively 8: Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.

	a. Use their experience and their knowledge of language and logic, as well as culture, to think analytically, address problems creatively, and advocate persuasively.
3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.	6: Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not. 7: Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence. 8: Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced.
Presentation of Knowledge and Ideas	
4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.	6: Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation. 7: Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation. 8: Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation
5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.	6: Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information. 7: Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points. 8: Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.
6. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.	6: Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 6 Language standards 1 and 3 on page 66 for specific expectations.) 7: Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 7 Language standards 1 and 3 on page 66 for specific expectations.) 8: Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 8 Language standards 1 and 3 on page 66 for specific expectations.)

6-8 Common Core Math Standards Applicable to Art

Proper way to cite a standard: Category**.**Grade level**.**Number for specific standard. For example: CC.6.4a

6th Grade	In Grade 6, instructional time should focus on four critical areas: (1) connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems; (2) completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers; (3) writing, interpreting, and using expressions and equations; and (4) developing understanding of statistical thinking.
Key Ideas and Details	**Ratios and Proportional Relationships (6.RP)**
Understand ratio concepts and use ratio reasoning to solve problems.	1. Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."* 2. Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."*[1] 3. Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.
Key Ideas and Details	**Geometry (6.G)**
Solve real-world and mathematical problems involving area, surface area, and volume.	1. Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems. 3. Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems. 4. Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

7th Grade	In Grade 7, instructional time should focus on four critical areas: (1) developing understanding of and applying proportional relationships; (2) developing understanding of operations with rational numbers and working with expressions and linear equations; (3) solving problems involving scale drawings and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface area, and volume; and (4) drawing inferences about populations based on samples.
Key Ideas and Details	**Expressions and Equations (7.EE)**
Solve real-life and mathematical problems using numerical algebraic expressions and equations.	3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.*
Key Ideas and Details	**Geometry (7.G)**
Draw, construct, and describe geometrical figures and describe the relationships between them. Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	1. Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. 2. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. 3. Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids. 4. Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. 5. Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. 6. Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.
Key Ideas and Details	**Statistics and Probability (7.SP)**
Use random sampling to draw inferences about a population.	1. Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences. 2. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.*

8th Grade	In Grade 8, instructional time should focus on three critical areas: (1) formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations; (2) grasping the concept of a function and using functions to describe quantitative relationships; (3) analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem.
Key Ideas and Details	**Geometry (8G)**
Understand congruence and similarity using physical models, transparencies, or geometry software. Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.	3. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. 4. Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them. 9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.