

## Chapter 1 : NEA - Arts Across the Curriculum, Grades

*Integrating art across the curriculum doesn't have to be hard! Our guest blogger shares a variety of ways that art can be integrated into all content areas.*

Classroom Ideas Writing Across the Curriculum: And districts all over the country are adjusting their curriculums to meet the challenge. The Common Core requires students to think and learn in a much deeper way, and one of the best ways to facilitate that deeper learning is to get kids writing. Not just in English class, but all the time. Writing regularly, in all subject areas but especially in math, social studies, and science is going to be crucial. Writing Across the Curriculum is a movement that began in the s and is gaining a lot of attention these days. The new standards will require that content area teachers reinforce the benchmarks that ELA teachers traditionally have covered in their classrooms. This means that the burden of literacy will shift to the entire teaching staff. Going forward it will be more important than ever that teachers coordinate their lesson plans in support of the Common Core Standards. Why Write Across the Curriculum? Learning to write, and write well, is a crucial life skill. We communicate through the written word on a daily basis via email and text. In addition, studies have shown that writing helps boost student achievement across the board because it actively engages children. It helps children remember and understand material much more than passive forms of learning like reading and listening. Writing develops critical thinking skills. Writing promotes independent thinking. In order to write, you have to have a point of view. Writing Across the Curriculum Benefits Teachers As daunting as writing across the curriculum may sound to some teachers, there are a lot of positive things about incorporating writing into your lesson plans! Writing is a great way to engage allof your students! Writing helps teachers monitor student progress and gauge their strengths and weaknesses. Writing saves you time! Writing can be a very efficient way to cover multiple standards at once because it is such a complex, multifaceted task. Students learn best by writing. The point is deeper learning, not a perfectly developed writing product as one would aim for in English class. There are many ways to incorporate writing into lesson plans without requiring a teacher to become a six traits whiz. Journal writing is a great way to create confident writers. Journals are an informal place for students to summarize their thoughts and think about class content, no matter what the subject. You can give the children writing prompts or just let them write freely! After a lecture or presentation, invite the children to record their thoughts. Then pair them up with another student and have them discuss the topic. Finally, open the discussion up to the whole class. Quick-writes are great ways to get students to practice writing and critical thinking skills. Set a timer for 10 minutes and give the children a writing prompt. Anything that gets them thinking&€"and writing! Short writing is going to be as important as long writing with the Common Core Standards. All children will have to express coherent thoughts in both short and long time periods. Think about the type of writing most often done in your discipline and have the students do it! For example, mathematicians write theorems and textbook problems. Scientists write lab reports. Journalists in all fields write articles. Have the kids create a website or a pamphlet for some real world writing experience. This not only gives the students hands-on experience in the discipline, but fulfills the Common Core requirement that students produce not only short writing assignments, but longer, more involved assignments too. He suggests breaking your lectures down into 5 to minute chunks and inviting the students to summarize what you spoke about at the end of each block. The Common Core Standards require all students to be able to research a topic in any discipline and write about it. So ask your students to write research-based arguments, not just persuasive arguments. The goal is for all children to become self-directed learners that are adept at researching and writing about! Writing across the curriculum is a wonderful way to get kids writing and learning in bigger, better, deeper ways. Is your school working on writing across the curriculum? Looking For More Writing Help? Check out our collection of free writing across the curriculum resources!

**Chapter 2 : Integrating Art Across the Curriculum - Minds in Bloom**

*11 visual art activities using Google's Art Project that can be used across the K curriculum. Math Forum: Symmetry and Pattern: The Art of Oriental Carpets Students in grades learn how symmetry offers one approach to analyzing patterns in Oriental carpets.*

The standards movement is having a direct, negative impact on early childhood programs. While this impact is most obvious in public school programs, it also affects early childhood programs by requiring unrealistic and inappropriate kindergarten-level entry skills. Since almost all of these standards are specific academic skills letters, letter-sound correspondence, numbers, even reading, one result of this emphasis is that many programs have increased the time and effort they devote to teaching specific academic skills, and reduced physical activities, music, dance, play and art. Views of the Experts Ever since the works of John Dewey and Herbert Read, educators have seen a central purpose for art in education. According to Jerome Bruner, young children learn most easily through enactive and iconic representation. Maybe one of the reasons children take so easily to computers is because icons are used to label all its functions. Children use these icons to think and solve problems, and it is important we do not force written symbols upon them too quickly. While a child who learns this way will do well in artistic endeavors at school, she should also be provided opportunities to use spatial intelligence in all other activities, but especially academic endeavors reading, writing, math, and science. Piaget believed that learning new concepts, ideas, and skills requires two fundamentally different processes: Art is a wonderful way to practice. A child who has just seen an elephant for the first time on a fieldtrip to the zoo, for example, returns to the classroom to explore the new idea through painting elephants. The Reggio curriculum, which has become known as the One Hundred Languages of Children explores the variety of ways children use to document their own learning. Some Reggio programs even have a full-time artist, whose job is to help teachers and children with this process, and an art studio Malaguzzi, In The Project Approach, drawings, models, photos, and writings challenge children to integrate a variety of concepts and document what they have learned, as well as providing a communication link to parents and the school community Helm and Katz, We know that it is easier for children to learn concepts and ideas that relate to something the child already knows, or has directly experienced Mayer, One way to make new learning meaningful is to offer children ways to explore how the new idea fits into what they already know. Art is a great way to do this. Different Art Tools, Materials and Activities There are a vast variety of art tools, materials, and activities that should be used across the curriculum. Programs that have always stressed art will have children who produce a fantastic array, variety, and quality of art. Finger paint, tempera paints, watercolors, and even some house paints are part of an early childhood art center. Collages are a great medium; both because of their versatility, and the way a vast amount of different content can be included. Collages can be as simple as colorful leaf collections in the fall or as complex as documenting a summer-long project or historical event. Vary the collage materials offered to the children by including natural materials, metallic papers, construction paper, doilies, old magazines, found objects, wood off-cuts, fabrics, etc. Photos, of course, can be included in collages especially by cutting around the subject and creating fantastic backgrounds. Photos should also be used to document the progress of a project, a playground renovation, a construction in the block area, and the growth of a garden. Further, photos are a wonderful way to create curricular themes around families of children in the program. Computers and digital cameras are also great assets to an early childhood program. By downloading photos on the computer and then letting children use them in a variety of projects, digital cameras are a great way to record field trips, put together books and wall newspapers, develop greeting cards, and so on Wardle, Drawing instruments can be used in a variety of ways. Making murals on the playground pathways or on a building wall; Doing rubbings of textures, numbers, currency from around the world, grave-stones, etc; Covering a crayoned surface with black paint, and then scratching through the surface; Line drawings of all different kinds; Wild patterns with bright markers; Illustrations for reports, stories, and news accounts; Greeting cards; Classroom labels, directions, lists, etc. A variety of surfaces should be used when painting, drawing, and using chalk, pastels, and other art materials.

Obviously art materials work differently on different surfaces, which is one of the joys of using so many different surfaces. Clay and play dough lend themselves to everything from providing a release of tension and stress, to making miniature models, creating pots and vases, and replicating pottery shards in excavated ruins. Older children enjoy adding different glazes to their wares and seeing how they change color after being fired. Children can even dig up different kinds of clay on field trips. Children can make models that are continually expanded throughout the year or as the theme or curriculum unit expands and develops. Woodwork can also be used in social studies units to build houses and forts, in playground projects of making traffic signs, ramps for cars, bird houses, and plant boxes, etc. Wooden picture frames, plaques for labels and official acknowledgements, and purely creative boats, cars, games, patterns, and inventions can all be made on the woodwork table. Woodwork projects also lend themselves to combining a whole host of other art materials: Batik, Tie-dye, Sewing, Prints and Stencils. A variety of cultures use sewing embroidery and batik to make traditional clothes and decorations. Tie-dye, batik and various prints can be used to create clothes and fashions, banners, tapestries and quilts, particularly by older children, and work well in historic, cultural and geographic projects. Prints can also be used to create packing paper, wallpaper, tablecloths, and a variety of artwork with repeated themes, books by the children, and games. Stencils are equally useful for creating repetitive symbols or patterns: Stencils and prints can even be used for large picture maps of symbols of objects represented on the map: churches, houses, schools, forts, gravesites, and battles. Folded and Cut Paper. We have all delighted in making paper airplanes; many children make paper cranes. Other folding and cutting activities include lanterns, snowflakes, doilies, and decorations with construction paper and colored tissue paper for windows and lights. These cutting and folding activities also lend themselves well to many cultural themes.

### Ideas for Art in Specific Curricular Areas

There are so many possibilities for using art across the curriculum that I will only touch on a few. Each reader will, no doubt, have many rich and creative additions. Some ways art can be used to enhance early literacy follow. Other art activities teach foreground and background, patterning, and creating order out of disorder. Create class and individual books. Use art to illustrate books, create an attractive cover, and maybe even make big, fancy letters to start each section, like in the old, hand-painted books. Create product packages for items children are learning about. Create advertising campaigns for fundraisers and issues important to the children, such as keeping the playground clean, etc. Document individual and group projects. Make letters of upper- and lowercase out of clay or play dough. Create lists of needed resources, field trip suggestions, classroom jobs, and so on - by drawing or cutting out the item, then pasting it on the list, and writing its name next to the visual symbol. Create a Big Book, or wall-size book, of a story being read to the class. Older children could also do this for younger children, or for children with visual impairments. Invent a symbolic language using pictures and symbols. Then write books, messages to parents, etc. Art is particularly useful in the social studies curriculum. A class can create a wall mural depicting members of their community by having children draw or paint them as they visit the classroom or when the children visit them in the community. Other classroom visitors: parents and volunteers can also be recorded and displayed in this way. In addition, invite parents and community volunteers to come to the classroom and demonstrate folk art from their own traditions. The volunteers can then help the children try out the methods and techniques for themselves. Many curricula are based on themes, an idea originating with John Dewey, and all themes can be explored through the use of art. Dioramas, models, murals, houses, communities, etc. Children can also make historical artifacts, like pots, baskets, and toys. A visual timeline can be assembled on a classroom wall, with visual symbols: photos, drawings, magazine pictures, real objects used to represent significant events along the timeline. Art is a wonderful way to teach all the concepts and skills children need before teaching specific academic skills. National Council of Teachers of Mathematics, This is important as school standards rush children too quickly into learning specific math skills before they have developed important foundation knowledge. A few ways art helps in learning math follow. All sorts of art activities teach the fine motor skills and eye-hand coordination needed to write mathematics symbols and functions, not to mention geometric shapes. Using more and less paint, more and less water in the paint, and covering more or less of the surface with paints, crayons, etc. Making geoboards and a variety of

math games out of wood. Matching colors and shapes one-to-one. Creating all sorts of three-dimensional art objects. Creating minimalist geometric designs with wood, paint, cloth, and construction paper. Folding paper for snowflakes, airplanes, doilies, etc. Numbering book pages and then creating a fancy table of contents. The numbers can also be visual symbols – for example, three cows for page three of a book about a visit to a farm. Use symbols, drawings, glued-on pictures, and even real objects for all sorts of graphs. Lots of math goes on in the woodworking area, from using rulers and tapes to measure National Council of Teachers of Math, different sizes of wood to be used. Mixing clay, paint, glue, etc. Lots of fantastic science phenomena occur in art; from mixing colors to dripping paint down the paper on the easel, from watching soft, wet clay dry into hard, brittle pottery or glazes change color after being fired, to discovering that dyes on batik only work on the areas that have no wax on them. Children can hypothesize about which boats they build will float, which will not; how to sink a boat that floats and how to float one that sinks; how to keep a boat from falling over when the wind blows on the sail; or whose car will go fastest down the slide. Batik, tie-dye, photography, marbling paper, and putting food color and Crisco into water all use different fundamental science concepts. Further, some wood finishes and paints are waterproof and some are not. Children can also make transparencies by using markers on blank slides, then seeing what image they have produced by projecting light through the slide. Children can also discover why different surfaces produce different results from crayons, paint, chalk, ink, markers, and so on. Finally, mixing paints, glues, different clays, various wood stains, and various tissue papers and translucent colored papers teach children about suspensions, light and pigment color mixing which produce different colors and thick and thin liquids. I have already discussed ways art activities help develop the critically important fine motor skills and eye-hand coordination needed for writing letters, words, numbers, and math functions. Woodwork, painting, and other activities also strengthen and help coordinate gross motor development. On the playground, children can use large house paint brushes and watered down paints to paint the fence; they can make fantastic murals on concrete walls and on the sidewalk with large chalks; and make signs for the trike path, garden, etc. A favorite activity for young children is putting their bare feet or hands in paint, and then using this body part as a stamp to create interesting patterns on a large section of butcher paper.

**Chapter 3 : Writing Across the Curriculum: What, How and Why - WeAreTeachers**

*Art Across the Curriculum: By Francis Wardle, Ph.D: The standards movement is having a direct, negative impact on early childhood programs. While this impact is most obvious in public school programs, it also affects early childhood programs by requiring unrealistic and inappropriate kindergarten-level entry skills.*

Integrating Math Across the Curriculum Are you having trouble integrating math with literature, geography, art, or music? Discover how one teacher brought her love of running into the classroom and, in the process, integrated all areas of her curriculum. Internet sites for integrating math with literature, history, science, geography, health, art, and music! Carol Goodrow, a first grade teacher and an avid runner, knows about the value of making connections. She has connected her curriculum by integrating running into almost every subject area -- and her students are reaping the benefits. By May, Goodrow told Education World, all the students could run a mile, had completed a mile fun run, and loved to write about running. According to Goodrow, many of the students started writing in their journals after running practice. Even those who had been reluctant writers loved the running practices so much they wanted to write about them. She saw improvement in math skills as well. For example, during year-end benchmark testing, the class completed sections on numeration more quickly, yet scored as well or better, than past classes. In addition, Goodrow reported that many students demonstrated a better understanding of fractions. They represented the fractions by models, but they could also compute them in their heads. Each time the participants ran, they kept track of their distances in personal mileage logs. According to Goodrow, this site is built so that kids can be authors, columnists, and more. There are sections where teachers can use running-related data, such as the voting booth data bank, to build math lessons. And of course it encourages fitness and healthy attitudes. Though geared toward students in Pre-K through Grade 2, many of the activities here can be adapted for use with older students. For example, the article *Time and Time Travel Fantasies*, reprinted from *Teaching K-8 Magazine*, recommends setting up a classroom clock display and allowing students to take the clocks apart and, hopefully, put them back together again as they learn to tell time. You might extend the activities with older elementary students by setting up a clock repair shop, rather than a display, and having students prepare estimates and invoices for needed repairs. Students might also prepare written reports about the ways in which people have told time throughout history. Scroll down and click *Sundial* to learn about the sun dial cannon. *Math and History At Mathematicians Commemorated on the Eiffel Tower*, students in grades will discover the names of French scientists and mathematicians that were placed on plaques in the Tower more than years ago. Following the tour, have each student return to the *Mathematicians Commemorated on the Eiffel Tower* site to read the biography of one of the mathematicians whose name is on the tower. Create a chart listing the name and major accomplishment of each mathematician. You might also encourage students to add to the chart the names of other mathematicians, some of whom might be found at *Biographies of Woman Mathematicians*. *Math and Science* After your middle- and high school students have toured the Eiffel Tower see "History and Math" above and perhaps helped build the Tower of the 3rd millenium, they may be ready to participate in *Hands-On Bridge Building*. This project, in which students use spaghetti, glue, and their knowledge of science and math to construct a weight-bearing bridge, begins with a lesson on scientific and mathematical vocabulary. Then, students create designs, reduce them to scale, prepare cost analyses, and build and test their bridges. The site includes quizzes, worksheets, and bonus and extension activities. Those stowaways who enjoy their voyage can move on to the second leg of their voyage, where they use what they have learned to determine future destinations and view satellite images to predict weather and ocean conditions. When students return from their sea voyage, ask them to plan a trip on land or in the air. Students should use a map to set their starting point and destination, decide on an appropriate mode of transportation, and determine a reasonable speed. You might also encourage students to identify some landmarks along the way and to write postcards about the places they "visit. Then they compare the foods on the pyramid to the foods they eat, keep a fat-counting diary, calculate the number of calories from fat they eat in a week, find their daily average of fat, and compare their fat intake with that of other students. The lesson is less

self-sufficient than many others, but the site does provide links to all the necessary information and resources.

**Math and Art At Greeting Card Geometry Math** , a unit you can use to teach geometry to students in grades , students learn to identify and create congruent, similar, and equivalent shapes and then they use those shapes to make a holiday greeting card. The lessons are simple, yet effective, and include creative extension activities. As a follow-up, you might encourage older students to use geometric shapes, and any medium, to create a poster showing the relationship between math and art. Then invite them to visit the National Museum of American Art or another online museum or art gallery, and identify examples of math in the art they find.

**Math and Music** The Music section of Online Math Applications is one of the best sites available for introducing students to music and its relationship to math. The rhythm page explains how different musical notes represent the rhythm, or time, of a piece of music, while pages on tone and tune provide a thorough discussion of pitch, frequency, and amplitude. The site explains the mathematical relationship of adjacent notes on a keyboard and the theory that ratio is essential to harmony. Here, students can rediscover the discoveries of Pythagoras and listen to the music of Mozart. After students have explored the site, taken some of the quizzes, or submitted quizzes of their own, give them an opportunity to listen to a variety of musical styles. Discuss the rhythm, tone, and tune of each selection, then ask students to compose a tune of their own. You might also encourage older students to research the lives of some classical musicians to discover how many were also mathematicians. Students of all ages will enjoy making, and experimenting with, a monochord.

**Fun and Games** Finally, invite students to explore the activities at Fermi Questions. These problems, which encourage multiple approaches to problem solving and emphasize process over product, involve water balloons and jelly beans. Does it sound like fun? Does it sound like math? Check out this site and see what you think. But save it for the end of a very warm day!

**The Mathematics of Rainbows** Examines a mathematical model of light passing through a drop of water.

**The Noon Observation Project** Students in grades use their knowledge of Math, geography, and the Internet to estimate the circumference of Earth.

**Online Math Applications** A ThinkQuest Junior site that includes discussions, questions, and quizzes to help students link math to music, history, science, travel, and investing.

**Fractals** A unit on fractals for elementary and middle school students.

**Tessellation Tutorials** Includes tutorials and templates for teaching and creating tessellations.

**Geometry Through Art** Provides lessons on teaching geometry through art, for students of all ages.

**History Topics Index** Lots of fascinating information about a number of topics related to the history of mathematics.

**The Chaos Game** A game about chaos and fractals for students in middle school and above.

**The Ellipse Game** A game about ellipses and foci for students in grades

**Chapter 4 : Arts Across the Curriculum – Hunter College**

*11 visual art activities using Google's Art Project that can be used across the K curriculum. 3-D Drawing and Geometry In this geometry unit students in grades see different types of 3-D drawings and learn how to do them.*

Concepts represent a sampling of issues largely directed by grant-funded ventures, calls for scholarly papers, and district initiatives. This bibliography contains a selection of papers and volumes on themes discussed by noted scholars, studies by arts organizations and partnerships, and articles by practitioners detailing art integration experiences in their classrooms. Art integration theory and process is an important concept in the field of art education. Often lauded as superheroes of public education reform, many art educators fear that utilizing art as a subservient handmaiden will compromise the validity of art in schools and jeopardize the position of the certified art teacher. While this document is intended to identify various approaches to and models of art integration, one must carefully consider the rhetoric versus the tested models presented here. The selections include an overview of definitions of art integration AI – what it is and what it is not, as well as often interchangeably misused terminology of interdisciplinary, multidisciplinary arts-infused and art-integrated curriculum. Commentary on studies and theoretical models of art integration are provided by their respective authors, many of whom present reports of art-integrated frameworks, studies, and lived exemplars. The article includes literature on various aspects of art integration, including maintaining visual art as a discrete discipline in art integration, theoretical underpinnings of pedagogical approaches, and successful models of school-wide art integration. Other essential factors for successful, systemic art integration, however, are teacher training, continuing professional development, administrative training and support, advocacy, and policy recommendations. Few actual studies showing statistical significance attributable to art integration are available, and many in the field question the authenticity and integrity with which visual art content is addressed in integrated curriculum, much of which is still being taught outside the purview of certified art teachers. Further structured and systematically analyzed study is needed to ensure a sustainable renaissance of art in education.

**Art as a Discrete Discipline within Art Integration** A significant concern about integrating the visual arts into other subjects across the curriculum generates from the fact that not all art integration lessons are developed to honor the integrity of the visual arts as a discipline, equally viable with other core academic subjects. An additional concern for educated and certified art teachers is the inclusion of teaching artists in lieu of art teachers in many such AI collaborations. The articles in this short section are written from the perspective of certified art teacher and higher education art educators and scholars. Bickley-Green presents a discussion of models for curriculum planning and instruction that consider the visual arts and math as equally significant subjects in schools. Rather than using the arts to support mathematical learning, Bickley-Green presents an approach to promoting complementary learning in both disciplines. Marshall suggests that if the arts are a substantive component of art integration and not just a curriculum embellishment, then a quality arts education can be accomplished through the integrative process with other disciplines. And finally, Rocher and Lovano-Kerr cautions against compromising the integrity of quality art programming and provides examples of how to avoid various pitfalls when integrating art across the curriculum.

**Math and art curriculum integration: Studies in Art Education** Bickley-Green presents historical information on the fields of art education and math education, providing a theoretical base for the ideal, the instructional, and the operational curriculum domains. Through extensive review of pedagogical and curricular models in each domain, she presents a model for coordination of math and art concepts through integrated curriculum to promote complimentary learning.

**STEAM as social practice: Cultivating creativity in transdisciplinary spaces.** Focus is on authentic engagement with the visual arts. Her argument counters the position that integrating art detracts from art education, stating that contemporary art and learning theory demand new approaches. Integrative art education models and classroom examples provide avenues for such learning. Can the arts maintain integrity in interdisciplinary learning?

**Arts Education Policy Review** Arguments are made for the need to maintain rigorous learning in the arts in addition to providing arts integrated opportunities in academic subjects. Users without a subscription are not able to see the full content on this page. Please subscribe or login. How to

Subscribe Oxford Bibliographies Online is available by subscription and perpetual access to institutions. For more information or to contact an Oxford Sales Representative click [here](#).

### Chapter 5 : NEA - Arts Across the Curriculum, Grades K-5

*The art facilities include the Joseph R. and Paul W. Gates Gallery, where both professional and student artists exhibit work. Our computer lab offers the Adobe Creative Suite, with which students learn Photoshop, InDesign and Illustrator.*

### Chapter 6 : Arts integration across the curriculum

*Research shows that children learn best through hands on activities. This next year, it is my goal to integrate my lessons with your curriculum as much as possible. In doing so, I can enhance and reinforce learning. Throughout the year, I will also be introducing lessons around master artists in an.*

### Chapter 7 : You're Not in Math Class Anymore: Integrating Math Across th | Education World

*Arts Across the Curriculum Whether students are majoring in English literature or mathematics, Hunter College believes that an excellent higher education includes the arts. That is why we are working on a bold new program aimed at boosting interdisciplinary collaboration among Hunter's esteemed arts departments, introducing the arts into "non.*

### Chapter 8 : Art Across the Curriculum

*The Arts-Across-the-Curriculum program allows students to experience the subject of their study in a tactile, sensory way. While it may not be unusual to study art alongside history or English, what is conspicuous about our approach is that students are called upon to re-create the art themselves.*

### Chapter 9 : Art-Centered Learning Across the Curriculum

*Art Across the Curriculum - Computer Activities helps the K-8 teacher integrate art and technology into the classroom. These easy-to-use lesson plans expand and enrich the subjects educators are already teaching.*