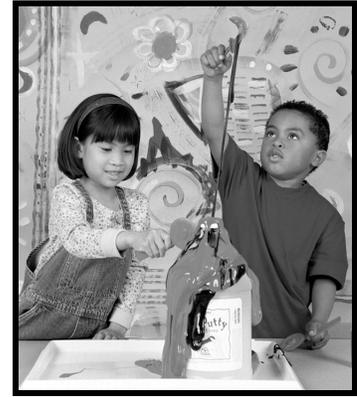


# How Art Impacts Learning

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## What makes ART such a great teaching tool?

Art engages children's senses in open ended play and develops Cognitive, Social, Emotional and Sensory-Motor skills. Art is a cooperative learning experience that provides pleasure, challenge, and mastery. Through art, children learn complex thinking skills and master many developmental tasks.

Art materials range from the simplest to the most complex. Young children can explore dozens of non-toxic art materials directly with their hands or with dozens of different painting and clay tools. Older children can select art materials that offer greater complexity and challenge. Art manufacturers provide an exciting range of tools to work with. Tree branches, shells, sponges, found objects or simple kitchen tools can easily become art accessories as well. Each art material and accessory provides different skill development and has the potential for new discoveries. A creative classroom offers a wide range of art materials and tools for exploration and learning.

The chart below is an Activity Analysis of 12 common art experiences. Each art experience is "broken down" or analyzed to determine what primary cognitive, social, emotional and sensory-motor outcomes it most facilitates. While these areas certainly do overlap, this chart outlines one main skills developed within each domain. Use it as a starting point for analyzing other art ideas, including your own "all time favorites."

## Activity Analysis of 12 Common Art Ideas

Art Activity	Activity Analysis			
This Art Activity teaches.....	These Developmental Skills			
	Cognitive	Social	Emotional	Sensory-Motor
<b>Open Ended Drawing</b>	planning & adapting	impulse control	individuality	fine motor skills
<b>Easel Painting</b>	decision making	works independently	self expression	fine & gross motor skills
<b>Bioputty</b>	cause and effect understanding	take turns	stress release	tactile stimulation
<b>Handmade Art Journal</b>	creative thinking	shares art and stories	self expression	eye-hand-brain coordination
<b>Crayon Resist Picture</b>	cause and effect understanding	focuses	sensory pleasure	spatial relations
<b>Collage</b>	plans, predicts, adapts actions	shares materials	makes choices	visual discrimination
<b>Group Murals</b>	large scale planning	group cooperation	adapts to group	gross motor / sweeps paint
<b>Scrap Wood Sculptures</b>	divergent thinking	shares materials	flexibility	small motor grasp
<b>Craft Stick Picture Frames</b>	spatial relations skills	makes giveaway gift	self discipline	responds to structure
<b>Paper Mache</b>	problem solving	delays gratification	sensory implosion	sensory integration
<b>BioColor Ornaments</b>	follows multi-step directions	makes giveaway gift	makes choices	works in 3-dimensions
<b>Watercolor Coffee Filters</b>	cause and effect understanding	impulse control	emotional release	controls fluid materials

## Integrating Art into Literacy, Science & Math

Art is an outstanding tool for teaching, not only for teaching developmental skills but also for teaching academic subjects such as math, science, and literacy. The most effective learning takes place when children have a hands-on learning experience. When children study any learning content, they learn best and retain knowledge longer if they do an art activity to reinforce their learning. This information has been recognized and used by good teachers since the time of Confucius, when he said: "I hear and I forget. I see and I remember. I do and I understand."

## Art & Literacy

Art activities are a great way to promote literacy and language development. Children who draw pictures about stories they have read improve their reading comprehension, story understanding and motivation to read new materials they have not seen before. (Critical Links). Art tools provide early learners with pre-writing experiences, as they grasp tools that later help them hold a pencil for writing. Art develops expressive

### Art teaches these literacy concepts:

Art Activity	Art Process	Literacy Concept
Group Murals	Children select mural theme then paint one large artwork cooperatively	Self expression, narrative story development
Open Ended Drawing	Child works within boundaries of paper, organizing content and composition	Spatial relations
Easel Painting	Child uses gross motor skills to sweep brush and control fluid materials	Visual literacy
Handmade Art Journal	Using papers and collage create journal cover, pages and binding.	Book knowledge and appreciation

## Art & Science

Art and science go hand in hand. Artists materials have scientific properties or physical attributes, many of which undergo a “change of state” when mixed with other art materials or left to dry. Science concepts taught during Preschool years include 1) Cause and effect 2) Properties of Materials 3) Changes of State. (Kilmer, S.J. 1995) These concepts are all easily explored with art materials. In later years, science standards include an “Investigation and Experimentation” category that also readily adapts to art. You can also add a science component to any art activity by taking out magnifiers and describing physical attributes, by using your five senses to experience a clay or paint, or by predicting what will happen when combining different art materials – such as crayon resist or BioPutty. Do you think the paint will cover the crayon? Do you think the BioColor will become slippery putty? Why or why not? What is your prediction, or hypothesis? Science involves keen observation and inspires curiosity and questions.

### Art teaches these science concepts:

Art Activity	Art Process	Science Concept
Watercolor Coffee Filter	Drops of liquid color expand, absorb, evaporate (dry) on porous material	Change of State
Crayon Resist Drawing	Wax crayon (solid) resists Watercolor (Liquid). Materials repel each other. Wax is “insoluble” to liquid.	Properties of Materials
"BioPutty"	Liquid BioColor mixes with BioPutty solution and changes to solid. Molecules in BioColor bond with molecules in solution.	Cause & Effect
Paper Mache	Torn paper & paper mache paste layered onto a fixed form dry and conform to that same shape. Absorbent, soluble materials transform into a solid layer.	Change of State

## Art & Math

Art can be thought about in a mathematical way. In early years children work with simple collage materials and beads which can teach them numbers, positive and negative space, classification, and sequencing and pattern recognition. Tangrams can be introduced, and art journals can become creative number or shape books. Older children create drawings, paintings and 3-D models of more complex geometry forms as well as tessellations, fractals and Fibonacci numbers. “Math is not just about numbers, formulas and logic, math is also about structure, symmetry, shape and beauty,” says University of Colorado math professor Carla Farsi. “Conversely, art is not only about emotion, color and aesthetics, but also about rhythm, patterns and problem solving.”

### Art teaches these math concepts:

Art Activity	Art Process	Math Concept
Collage	Glue paper and collage materials onto paper in composition of your choice	Sequencing, rhythm, pattern
Scrap Wood Sculptures	Glue wood scraps together to create abstract 3-D sculpture, dry then paint.	Pattern, volume, classification
Craft Stick Picture Frames	Place craft sticks into square or rectangle, glue corners, dry then paint.	Shape, structure
BioColor Ornaments	Open clear ornament and sprinkle inside both sides with BioColor shimmer powder, followed by. 3-4 colors BioColor. Close and shake. Dry & hang.	Volume, symmetry

## Conclusion

There's so much learning that takes place as a child creates art. Not only do children develop eye-hand coordination, but their brain connects to their visual and motor development in ways that help children master real life skills. Art develops our imaginations and helps us discover new ways to process information. The problem solving, critical thinking, planning and adaptation inherent in art making is much more complex than most people realize. The myriad of art materials, and recycled objects that are used in art provide new and different learning as they introduce new problems to solve and new challenges to creative thinking.