



STEM & CREATIVITY

IN THE OUTDOOR CLASSROOM

WITH ANNA REYNER

HANDS-ON PROFESSIONAL
DEVELOPMENT/EARLY EDUCATION



WORKSHOP SLIDES AND HANDOUT




42 STEM Activities For Children & Families





View workshop videos at www.CreativePlayLA.com


How do we preserve childhood curiosity & wonder?
By following children's lead.



Insect Treasure Hunt




Bark Investigation



Aroma Search

Do you have dirt or sand in your neighborhood?
If yes....try these ideas.



Mud Painting



Sand Coloring

Sand & Glue Art

ASK YOURSELF: As a teacher or parent, how could you expand on the learning inherent in these activities? To extend that learning. What additional tools or materials might you provide? What open ended questions could you ask?

STEM & CREATIVITY in the Outdoor Classroom
by Anna Reyner, MA

There's a global movement to have more outdoor nature play for children and families. Children need and benefit from time spent outdoors, which is where you'll find the STEM! This workshop focuses on activities that teach early math and science concepts. It suggests you look for teachable STEM moments in everyday activities.

Early math & science foundations are very inter-related. Preschool math concepts overlap with preschool science concepts. In the field of mathematics, the skills of classifying, comparing and measuring are referred to as Math Concepts. In the field of science, these skills are referred to as Process Skills. To learn about these ideas, check out California's Preschool Learning Foundations at www.cde.ca.gov/sp/cd/re/psfoundations.asp. But meanwhile, here are the basics, and where we begin here.

1. PreK Science Observing / Comparing / Classifying / Measuring / Communicating / Inferring / Predicting.
2. PreK Math Number Sense / Algebra and Functions / Measurement / Geometry / Mathematical Reasoning

As you look at these 42 STEM ideas, put on your "math & science" thinking cap. With that mindset, you'll soon discover how to teach STEM with greater INTENTION, simply by reframing your own point of view. Ask yourself HOW does this activity engage the Science & Math skills listed here? The answers are there for you to figure out. Let's have fun learning together, shall we?

1. Bark Investigation
Observe and investigate the bark on a tree.

2. Aroma Search
Smell the flowers or bushes in your neighborhood and compare their scent or aroma.

3. Insect Treasure Hunt
Look for insects in your neighborhood. Draw pictures of what you find.

THINK ABOUT IT!
Math is part of children's everyday lives. Taking advantage of math moments develops math learning. Each math moment reinforced by a caring adult helps children become ready for more math learning.

LOOK FOR IT!
Review this checklist of math & science foundations. What will you say or do to enhance learning?

1. PreK Science Observing / Comparing / Classifying / Measuring / Communicating / Inferring / Predicting.
2. PreK Math Number Sense / Algebra and Functions / Measurement / Geometry / Mathematical Reasoning

4. Mud Painting
Make mud with dirt & water, and paint with it on brown paper or grocery bags.

5. Sand Coloring
Put sand in bins and color it with liquid watercolor. How many colors can you make?

6. Sand & Glue Art
Make marks on paper with white glue and add sand on top. Add other nature elements. like twigs or seed pods.

THINK ABOUT IT!
What is Number Sense?
Number sense is a broad term that refers to a group or set of skills that are needed to perform basic math operations. You might think that number sense is just simple counting and that young children will master number sense quickly. However, number sense refers to deep understanding of HOW numbers work. It will take some time for young children to master these skills!

You don't need fancy materials to teach science or math. Instead, use everyday materials that are easy to access,



Rock Salt "Crystals"



Worm Tubs

ASK YOURSELF: As a teacher or parent, how could you expand on the learning inherent in these activities? To extend that learning: What additional tools or materials might you provide? What open ended questions could you ask?

7. Rock Salt

"Crystals" Paint rock salt by soaking it overnight in food coloring or Liquid Watercolor. Great for sand tray play, these colored salt crystals look like chunks of quartz when soaked with color. Find rock salt (also called Ice Cream Salt) in most grocery stores.

8. Worm Tubs

Wait for after a heavy rain, then search for worms outside in your neighborhood. Place some dirt in a plastic tub and place worms in it. Observe, measure and compare them before returning worms to their natural habitat.

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To teach Science Process Skills, observe and study the properties of materials - both living and non living materials



Glitter Paint Suncatcher



Salt & Watercolors



Contact Paper Window Art

9. Glitter Paint Suncatcher

Drip glitter paint onto a piece of waxed paper ("Cut Rite") add 2nd piece of waxed paper on top and squish to make design. Dry. Hang in window.

10. Salt & Watercolors

Tape white paper down to a table so it stays flat. Place salt and liquid watercolor in small cups for open ended art. Paint with watercolors then sprinkle salt on top and watch what happens.

11. Contact Paper Window Art

Place leaves and thin collage papers on the sticky side of contact paper, then secure sticky side to a window for see-through collage art.

Make Nature Mandalas & Rock Spirals

They are easy, fun, and have endless design possibilities.



12. Nature Mandalas

Gather natural materials and make circle patterns (mandalas).

13. Flower Petal Mandalas

Find flowers of different colors, gently remove petals, arrange petals in a circle pattern. Document by drawing a picture of it or sending a photo to a friend.


14. Rock Spiral Designs

Gather pebbles and rocks. Create a spiral design. Start designing from the center for your first one, then try starting from the outside for another one. Which is easier, and why?


THINK ABOUT IT!

Math is important and it's important to help young children develop their mathematical thinking. A child's math knowledge at the start of kindergarten predicts later academic achievement better than early reading or attention skills.


Try Non-Traditional Gardening
You can plant seeds in just about anything.




Tea Cups




Shoes



Stuffed Jeans



Eggshells



Boots

ASK YOURSELF: As a teacher or parent, how could you expand on the learning inherent in these activities? To extend that learning: What additional tools or materials might you provide? What open ended questions could you ask?

15. Eggshell Planter

Gently break egg shells in half and plant small seeds.

16. Shoe Planter

Take old, recycled shoes and boots and re-purpose.

17. Tea Cup Planter

Tea cups and coffee mugs don't have drainage holes so water lightly.

18. Jeans Planter

Its fun to see plants grow in old clothes! Amuse yourself and your neighbors.

THINK ABOUT IT!

Talking about math is also important and every bit of math talk helps. Research shows a small increase in math talk, such as asking about how many objects there will be if we add one or take one away, brings big results.

Plant Wheat Grass for Cats





ASK YOURSELF: As a teacher or parent, how could you expand on the learning inherent in these activities? To extend that learning: What additional tools or materials might you provide? What open ended questions could you ask?


19. Plant Wheat Grass

If you want to make friends with a cat, buy wheat grass seeds and plant them. They are easy to grown in a sunny window and fun to watch. Cats love wheat grass and it's healthy for them.

THINK ABOUT IT!

Math is measuring, sorting, building, noticing patterns, making comparisons, and describing the environment, as well as counting and knowing the names of shapes. There are many ways to incorporate math learning into everyday moments

EARLY BRAIN DEVELOPMENT
DID YOU KNOW??? Children build their own brain pathways and strengthen their CAPACITY for learning...when their five senses are actively engaged in open ended play.



Watercolors are calming...and their fluid quality makes them great for open ended play and discovery. They come in many washable varieties.

20. Watercolor Relaxation

Paint with watercolor paint cake strips. Use different size brushes. Take your time, slow down. Take 3 deep breaths. Relax your shoulders and let go of your worries and cares.

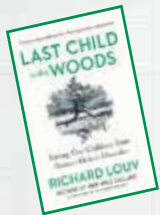
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The Outdoor Classroom: Basics

Children can do anything outside
that they can do inside...with added benefits



Proven, Evidence Based Benefits to Outdoor Learning:
Reduced Stress, Improved Mood, Increased Capacity for Learning

7. Fresh Air Stories

Read a book to children outside on the grass.

8. Outdoor Drama

Play with dramatic play costumes in your outdoor playhouse.

9. Lie Down Drawing

Draw with crayons on BIG white paper while lying down on your paper outside.

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Take MESSY ART & CLAYS outside

where children can feel the FREEDOM to let go of control and release inhibitions.



Early Toddler Painting



Air Dry Putty Play

ASK YOURSELF: As a teacher or parent, how could you expand on the learning inherent in these activities? To extend that learning: What additional tools or materials might you provide? What open ended questions could you ask?

10. Toddler Painting

Paint with washable cake watercolors. Use an upside down plastic bin as a table.

11. Air Dry Putty Play

Experiment with colored doughs outside. Air Dry Putty is particularly fun and easy to work with (Model Magic or Colorations brands). Air dry putty comes in white and colors, try both. Add color to the white version by adding colored markers.

THINK ABOUT IT!

An environment where there is no one right answer for every problem encourages creativity.

Teachers who enthusiastically encourage children to develop more than one solution to a problem see greater creativity in problem solving.

Check out these TWO CREATIVE SET-UPS for Process Art



DIY Group Easel Painting

Children's Hospital CDC, Los Angeles



Nature Sketching

Child Education Center, Pasadena

ASK YOURSELF: As a teacher or parent, how could you expand on the learning inherent in these activities? To extend that learning: What additional tools or materials might you provide? What open ended questions could you ask?

12. Group Easel Painting

Duct Tape cardboard boxes (cut bottom 3-4") to your table to create a group painting area.

13. Nature Sketching

Sketch outside from nature, using portable sketch easels. DIY from heavy cardboard and big clips.

THINK ABOUT IT!

Nurturing creativity starts with an image of children as wise and capable decision-makers. Children are born predisposed to be creative. It is our job to nurture children's creativity and allow it to flourish and find expression.

QUESTION - How can we ACTIVELY ENGAGE in nature if we live in the city?
Even in urban areas, parks are usually nearby.



Nature Discovery Walk



I went to a local park with my son this week and look what we found!

14. Nature Discovery Walk

Go on a Nature Walk with your child and look for changes in the environment since you were last there. Talk about the changes, and ask your child open ended questions about the plants you find. Consider leaving a creative mark for others to see,

like this painted eye we found in our local park.

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Sensory Science Memory

Hands-On Activity / Basic Art Materials



1. Crayons
2. Plain Paper (5 sheets)
3. Fine Black Marker

Hands-On Art / Workshop Activity

15. Sensory Science Memory:

In today's workshop we practiced guided meditation and recalled sensory science memories from our childhood. We first did relaxation and breathing exercises together.

We closed our eyes and followed our leader's guidance, going back in time, to our "earliest sensory science memories."

We drew our best sensory science memory on paper. Then we shared our drawings and memories with colleagues in small break out rooms.

Family Play & Engagement Outdoors... It's Magical!



Family Bubble Play

Engaging as a family outdoors builds meaningful attachments and lifelong memories



Kitchen Utensil
Bubble Wands



DIY Bubble Wands

16. Family Bubble Play

Make your own bubble wands and bubble solution, you'll find plenty of DIY ideas and bubble solution recipes on the internet.

17. Kitchen Utensil Bubble Wands

Check your kitchen drawer for whisks and spatulas, anything with holes...Dip in bubble solution and blow through the holes.

18. DIY Bubble Wands

Use pipe cleaners for DIY bubble wands, add beads or wrap small sticks.

THINK ABOUT IT!

It's important to believe your child can get better at math and develop mathematical skills. Growth mindset, the belief that we can keep learning and getting better at math, is very important in supporting children to become mathematicians.

Family Creativity is Powerful!



Observational Painting from Nature



Family Nature Portrait



Water Plants Together

19. Observational Painting

Collect gourds or seed pods from your neighborhood and practice “observational drawing and painting” with your family.

20. Family Nature Portrait

Take a family walk outside and take a “selfie” portrait with a nature background. Find the sunlight overhead, and make sure it’s on your faces for the picture. Draw it when you get home.

21. Water Plants Together

Ask parents to actively engage with children during garden time using inquiry language and math and science “talk”.

Ask children: What do you think? What will happen next? How could we do it differently? What else could we try?

THINK ABOUT IT!

Parents can foster a positive attitude toward math. When parents find math activities that THEY enjoy and feel confident doing, children are more likely to enjoy them too.

Build a MAKER SPACE...in YOUR home.

It's easier and less expensive than you may think. And it's way more valuable than having an area for toys



22. Create a Maker Space

Dedicate an area in your home and create a permanent Maker Space, using inexpensive items as shown above, or items from yard sales or thrift stores.

THINK ABOUT IT!

Develop children’s creativity and critical thinking by providing a rich physical environment for children to “tinker in” without the pressures of time or the pressure of creating products that will be judged.

Time to play, experiment, have fun, set aside electronics, make mistakes and exercise a “what if” mentality...these are some of the positive benefits a Maker Space provides.

Maker Spaces support a GROWTH MINDSET...



It's important to BELIEVE your child can get better and better at math & science skills with practice.

GROWTH MINDSET, the belief that we can keep learning and getting better, is important in supporting STEM skills.

23. Create a Pegboard Maker Space

Set up a Maker Space at home, using a pegboard. Make your own inventions, relax and tinker, use your imagination. Add new natural materials often, find loose parts to use.

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Bring Gardens Inside with Collage Art / My Garden Wall



Collage Art offers children the ability to think critically and solve problems with loose parts in a systematic and organized way.

24. Garden Wall Collage

Make garden collages on brown paper bags or brown Kraft paper. Supply a variety of collage materials for all family members to design their personalized garden walls.

THINK ABOUT IT!

Do you ever find yourself trying to avoid mistakes, and do things perfectly? Our desire to do things “right” and strive for perfection often gets in the way of play and creativity.

Mistakes are important to embrace in life. It’s okay to make mistakes! Mistakes help us learn! Children benefit from teachers and parents who focus on problem solving and using mistakes as an opportunity to promote growth mindset, “Let’s try again” is a very positive, growth minded message.

Create an Effective Science Center in your window

1. Observe
2. Investigate
3. Communicate
4. Document



25. Simple Science Center

Make a window sill into a science center. Take clear contact paper and press leaves onto sticky side, then adhere it to window.

26. Oil & Water Bottle

Add oil and water to a bottle with food coloring. Shake and watch liquids separate.

27. Specimen Jars

Find nature objects outside and place in an observation jar. Describe. Sketch.

28. Weather Inquiry

What’s the weather like today? Post a Weather Question and talk about it regularly. How does the weather change where you live, from hour to hour, from day to day, from season to season?

Use “math talk” when engaging in everyday activities

Encourage critical thinking by actively listening, then asking open ended questions.



Compare & Contrast
Ask: What do you think will happen IF...

ASK YOURSELF: As a teacher or parent, how could you expand on the learning inherent in these activities?
To extend that learning: What additional tools or materials might you provide? What open ended questions could you ask?

29. Baking with Math

Cook together using “math talk” to explore the ingredients and the baking process. Is this more sticky, or less sticky? Do you think this bowl is big enough? How high should we fill each muffin tin? I wonder why...what do you think?

30. Table Easel Painting

Paint on a table easel outside. Make your own easel using clips and a board. Engage your child about their painting process, using open ended questions. Provide alternatives to traditional paint brushes.



I went on an inner city
NATURE DISCOVERY WALK this week..
And what do you think I discovered?



PARCHED DRY WEEDS
that no one had watered...
(There's a drought...after all)



BUT...with careful
OBSERVATION
(Science Process Skill)
I found some plants still alive!



Then... I thought of a

**STEM ACTIVITY for a
"Weed Collection"**

BUT FIRST

Some cleaning
and sanitizing of the dirt and soot
on my specimens.

(How many adjectives can you think of
to describe the dirt these plants had accumulated
by being ignored for so long...
by being born as inner city
curbside plants in the first place?
By being alive during a heat wave?
Can you find a metaphor here?)



Here's my **Weed Collection Stem Activity** for you:

Step 1: Observe & Investigate Step 2 - Sort & Classify



With closer study, I found the weeds were interesting and even beautiful.

31. Dried Weeds / Specimen Search

Find some dry weeds that seem to be neglected and investigate them. Look closely and see if any of the dry plants are still alive.

Gather as many different weeds as you can, then take them home to clean first, then study and draw.

THINK ABOUT IT!

What is Number Sense?

Number sense is a broad term that refers to a group or set of skills that are needed to perform basic math operations. You might think that number sense is just simple counting and that young children will master number sense quickly. However, number sense refers to deep understanding of HOW numbers work. It will take some time for young children to master these skills!

32. Dried Weeds/Cleaning

Lay out your dry weeds on a tray and sanitize them with a Lysol type spray, outside. Leave them outside for a while until the strong smell goes away. How long do you think that will take?

THINK ABOUT IT!

Number Sense - An Overview

Number sense is the critical foundation that ensures children will be successful in mathematics for many years. It lines them up for success in addition, subtraction and other math operations, and includes:

1. Rote Counting (naming numbers in order)
2. Number Recognition (recognizing numbers in print)
3. Counting with One to One Correspondence (each number has a constant value)
4. Comparing Quantities (understanding the concept of more/less/same)
5. Cardinality of Number (recognizing that the last number said when counting is the number of total objects)
6. Conservation of Number (understanding that the number of objects is always the same even when rearranged)
7. Subitizing (the ability to recognize "how many" in a set without counting individually)

33. Dried Weeds / Observation

Observe specimens and investigate/discuss their attributes.

34. Dried Weeds / Sorting & Classifying

Sort the specimens and group (sort) by categories of your choice. Are any still alive? Do any contain seed pods? Do any have an aroma? How will you sort them?

Weed Collection Stem Activity

Step 3: Communicate Step 4 - Document



COMPARE & CONTRAST:
Brown, dry, parched, brittle, dirty, sooty
With other plants that might be:
Green, wet, soft, flexible, clean

ASK YOURSELF: As a teacher or parent, how could you expand on the learning inherent in these activities?
To extend that learning: What additional tools or materials might you provide? What open ended questions could you ask?

Voila! Two finished Accordion Books
from an inner city Nature Discovery Walk, and Weed Collection.



Seed Pod Book

Pebble Rock Book



Years ago I wrote an Accordion Book Lesson Plan, as a Smart Art Lesson idea.

I suggested using sentence strips.

You can also use plain paper, like we did today.

Accordion Book



MATERIALS

- ✓ Sentence strip paper
- ✓ Hole punch
- ✓ Pencil
- ✓ Sharpener
- ✓ Black or Blue Ink
- ✓ Black or Blue Ink
- ✓ Pencil
- ✓ Pencil
- ✓ Pencil

OUTCOMES

Let your students lead! This art idea helps children develop:

- Cognitive/Thinking Skills**
Plans, predicts, adapts actions
- Problem solving**
- Emotional/Feeling Skills**
Patience
- Individuality**
- Social/Relating Skills**
Controls impulses
- Focuses on mission**
- Physical/Coordinating Skills**
Visual perceptual skills
- Eye-Hand/Body coordination**
- Literacy & Language Development**
Book representation
- Sequence and story progression**

EXTENSIONS
For younger children, this simple book can be used to practice lines, shapes, words and left to right directionality. Older children enjoy making comic strips, picture books, and narrative illustrations on the lines. Try "optional content" or "My secret life as a..." Create sports narratives, science fiction, or underwater scenes themes with words and pictures. Make a creative wall display, use Velcro to attach 3-D books to a bulletin board. Send a favorite picture book; then have children to write and illustrate a miniature "sequel" to the story.

Vocabulary
Accordion, Create, Bannish, Lark's Hood East

Age 4-9 20-30 Min

35. Dried Weeds/Language Development

Think of words to describe each plant specimen's qualities and write those words down.

36. Dried Weeds/Book Making & Documentation

Create accordion books from plain white paper and document your findings.

37. Weed Specimen Book

Observe your plant collection and select your favorites. Using a pencil or black marker, sketch one favorite plant on each page of your book.

38. Pebble Rock Book

Find small pebbles in your neighborhood, just as you found dried weeds. Follow the same process of studying and sorting them, then create a separate Pebble Rock Book.

LOOK FOR IT!

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THINK ABOUT IT!

What is Mathematical thinking?

Mathematical thinking begins in the early years with dialogue and real-world exploration It's natural to think that mathematics is primarily about numbers. In school, we first learn how to recite numbers and then spend lots of time writing them down and manipulating them on paper.

Of course, numerals (the written notation for numbers), along with other symbols, are critical for communicating ideas about quantities and expressing how they relate to each other. But what appears to be lost in conversations about school mathematics, however, is that mathematics is **primarily about thinking**.



Making Books with Children

One of our primary goals as teachers is to help children develop a love of reading and an appreciation for books. A creative teacher develops this love for books through special assignments, art projects, and a myriad of hands-on classroom activities that address the link between book appreciation and classroom learning more directly than when children create their own books.

Because books provide so much potential for learning and creativity, a high percentage of Great Art Lessons are devoted to bookmaking. Six bookmaking activities are included here for both preschool and school-age children. Four simple books are devoted to young children's "Writing Time": a Sorting Book, a Quick Paper Bag Book and

an Accordion Book. Two others, the Chopstick Book and Origami Book, will challenge and motivate the school-age child. None of these can be readily adapted with a little imagination, and all of them are fun to make.

When children make books, they exercise cognitive skills such as problem solving, decision making, and critical thinking. They have to plan, predict, and adapt their actions as they work. They work in these dimensions, which develop spatial relations and visual problem-solving skills. It's easy to match the content of books to a child's developmental level and interests. Even very young children can scribble and make shapes, learning directionality and the left-right progression of books. Making pictures


or illustrating books also develops imagination, individuality, and self-expression. Combining writing exercises with picture making offers a complete tie-in with literacy goals and classroom lessons.

One of the pleasures of bookmaking is the wide range of content that you create a book to enhance the lesson, whether it be weather, animals, or the five senses. Further discovery and learning. Books make wonderful take-home gifts for special occasions. Bookmaking is an appealing to children and parents alike that booklets books often stand the test of time and remain useful teaching tools in a parent's memory chest forever.

Try one of the creative ideas for book lessons today. All can be made from simple materials and offer a wide range of possibilities for discovery and building self-esteem.

Content Ideas:

- Colors
- Shapes
- Textures
- Letters/numbers
- Finger print pictures
- Leaf collage/rollups
- Weather/sensory
- What I love about you
- Friends/family
- Vegetables/fruits
- My favorite things
- I have a dream that ...
- My most daring adventure ...
- If I were President ...
- Open ended



BOOK MAKING is great for STEM learning.

Download a full size printable at www.CreativePlayLA.com



Final (New) STEM Lesson Plan: "Neighborhood Nature / Accordion Books"



Collect Weeds & Pebbles on a Neighborhood Walk

Select 8 Pebbles / Compare their attributes / Document your Pebbles in an Accordion Book

THINK ABOUT IT!

10 Tips to Support Children's Science Learning

- * Value your child's questions. ...
- * Explore and find the answers together. ...
- * Give children time and space to explore. ...
- * Accept that explorations are often messy. ...
 - * Learn from mistakes together. ...
 - * Invite curiosity. ...
 - * Support further exploration.

Leaf Attribute Study

Hands-On Activity / Basic Art Materials



1. Crayons
2. Plain Paper (5 sheets)
3. Fine Black Marker

Hands-On Art / Workshop Activity - Leaf Attribute Study

36. Leaf Attribute Books

In today's hands-on art, we made 2 accordion books. We gathered leaves and compared their attributes. We decided to compare them by 1)size and 2)number of veins.

In our 1st book we drew the leaves sequentially from biggest to smallest.

In the 2nd book we drew the leaves sequentially from most veins to least veins. We predicted that the largest leaves would have the most veins. What did we discover from our observations?

Was our prediction or "hypothesis" correct? What did our "scientific process" or investigation conclude?

THINK ABOUT IT!

Mathematical Thinking & Poverty

We now know that if children are not exposed to important mathematical ideas through activity and conversation in the early years, they will lack important foundations for Grade 1 and, most importantly, it will become increasingly difficult for them to catch up to their more equipped peers in school.

This effect is prominent for many children living in poverty who are particularly at risk for early numeracy difficulties. Children often lack key foundational competencies when they enter kindergarten having had little exposure to "math talk" in the home.

More STEM Activities:



Rock Painting



Watering Plants

ASK YOURSELF: As a teacher or parent, how could you expand on the learning inherent in these activities? To extend that learning, what additional tools or materials might you provide? What open ended questions could you ask?

37. Kindness Rocks

Collect rocks and paint them. Make Kindness Rocks with positive message and spread them out throughout your neighborhood.

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Rock Painting Technique #1 For Young Children

Rock Painting Technique #2

For Older Children & Adult Family Members

Rock Painting - Recommended Materials

Try either Puffy Paint or Acrylic Paint Pens to make rock painting easy. Or try the traditional approach using a small paint brush and acrylic paint.

THINK ABOUT IT!

Teachers and parents can help children learn to think and solve problems in creative ways by giving them the freedom to make mistakes and by respecting their ideas. To solve a problem creatively, children need to be able to see a variety of perspectives and to generate several solutions.



Citrus Art Prints

Citrus Fruit on Light Table

Citrus Fruit & Paints on light table

Citrus held in window light

39. Citrus Fruit & Light

Examine citrus fruit slices using a light table or simply hold slices up to light. Because of its many unique attributes, citrus fruits are especially good for math and science investigations.

40. Citrus Art Prints

with citrus fruit and paint on paper or cloth.

THINK ABOUT IT!

When children focus on problem solving rather than on getting the right answer they learn more.

Here's another popular lesson from my Smart Art Ideas (*see presentation note below)



Ice Tunnels

Step 1: Freeze the Water
Place ice in several different sized plastic containers. Freeze overnight.

Step 2: Freeze the Salt
Drop salt on the water table or drop tray.

Step 3: Mix Salt with Colors
Place 6 colors Liquid Watercolor™ in the palette tray or plastic cup. Add large amount of salt to each.

Step 4: Drop Colors onto Ice
Drop only colors on ice. As the ice melts, salt will transfer with it to the water below.

Materials:
Liquid Watercolor™
Plastic containers
Salt
Drop tray or water table
Palette tray or plastic cup
Optional: Mask tape
Spoons

Classroom Tip:
As an outdoor activity, this can also be done in a sandbox.

Outcomes:
Predict outcomes
Experiment/Problem Solving Skills
Science observation
Tactile response
Social/Relating Skills
Works with a group
Creative expression
Physical/Coordinating Skills
Fine and gross motor skills
Creative/Field materials
Literature & Language Development
Role playing
Labels and follow directions

Classroom Tip:
Teach science when you use salt. Our scientific property of salt is that it lowers the freezing point of water. The salt causes brines in the air to freeze that we walk. The colors help you see the brines better and make it more fun. You can make this with more plastic containers back in the day. It's better to freeze and you avoid dirty dishes. Have children predict the outcome as they dip the salty colors on the ice. Then watch what happens on the lesson program.

Vocabulary:
Change of State: Liquid to Solid to Liquid, Scientific Property, Freezing Point of Water

Level: 3-9
Days: 1




38. Ice Tunnels with Salt






This is popular on a sunny day outside. Use food coloring if you don't have access to Liquid Watercolor.

*Sadly, my two Award Winning books, Smart Art Idea and Smart Art Ideas 2 are now out of print. They had several re-prints and 10 good years of selling well, but are now retired.

However, I've added many FREE DOWNLOADS of SmartArt lesson plans and articles on my website at www.CreativePlayLA.com or email me if you want me to send you a Lesson Plan or article in particular.

Email: art@annareyner.com

Sidewalk Chalk offers endless possibilities for creativity and critical thinking

ASK YOURSELF: As a teacher or parent, how could you expand on the learning inherent in these activities?
To extend that learning: What additional tools or materials might you provide?

41. Sidewalk Chalk - Body Designs

Create designs that you can lie down onto and make a picture from, like wings or backgrounds. Imagine putting yourself into the picture, then plan and draw it out.

42. Sidewalk Chalk - Stained Glass Geometrics

Use masking tape to section off areas then fill in with chalk. Remove tape when done.

43. Sidewalk Chalk - Word Art.

Create positive messages with words art to spread positive energy.

CONCLUSION



CONCLUSION: ON CREATIVITY

THE POTENTIAL FOR CREATIVITY the act of making something new - lives in each of us. Most of us act less and less upon this potential as we "grow up" and become adults.

Own own creativity becomes a memory, something we gave up in exchange for conforming to rules and responsibilities. HOWEVER, it's never too late to make your own creativity a priority. Creativity is one of the most important skills we can develop as parents and educators.

After all, if you're reading this you are probably either a teacher or a parent, or both. Your influence on children is enormous, and your own attitude makes all the difference. Thank you for showing up today, and thank you for the important work you do with children.



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