

Have fun with mAtH & SCIENCE



Activities & Exploration

FOR PRESCHOOLERS

EXPLORE ABOUT

FIVE SENSES

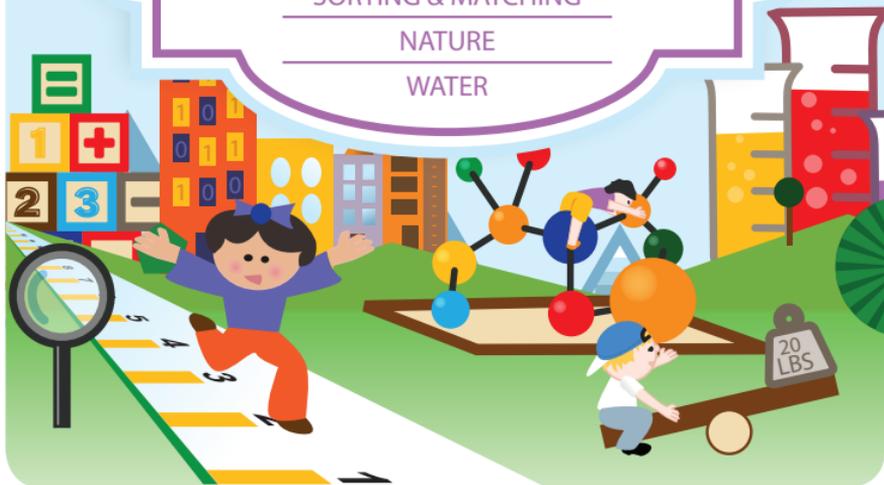
EARTH MATERIALS

BLOCKS & PUZZLES

SORTING & MATCHING

NATURE

WATER





Online Resources & More @ your library

Your library has many resources you can use to help build your child's math, science, and early literacy skills. The library has great online tools, programs, and informational books to help you explore and learn with your child.

FOR FUN AND GAMES WITH YOUR CHILD, VISIT:

DayByDaySC.org

Great storytimes, e-books, games, puzzles and more.

More Resources

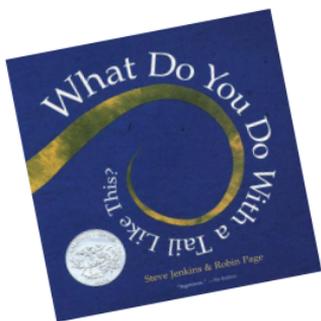
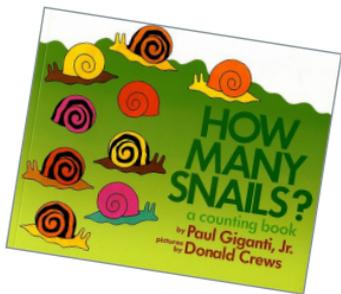
More resources can be found on the South Carolina State Library website, including the resources found here.

statelibrary.sc.gov/children-and-teens

GREAT NONFICTION BOOKS FOR PRESCHOOLERS

- ★ ***Counting in the City (Math Around Us)***, by Tracy Stefford Also in this series - *Shapes in the Kitchen; Sorting at the Market; Measuring in the Garden*, and more.
- ★ ***How Many Snails?: A Counting Book***, by Paul Giganti, Jr.
- ★ ***I Spy Shapes in Art***, by Lucy Micklethwait Also - *I Spy Color In Art*.

- ★ ***Lots and Lots of Zebra Stripes: Patterns in Nature***, by Stephen Swinburne.
- ★ ***My Eyes (All About My Body series)***, by Brian Enslow. Also in this series - *My Mouth, My Hands and Feet*.
- ★ ***My Shapes/Mis Formas***, by Rebecca Emberley
Also - *My Colors/ Mis Colores; My Numbers/Mis Numeros*.
All of these titles are bilingual English/Spanish.
- ★ ***One, Some, Many***, by Marthe Jocelyn Also - *Ones and Twos; Over, Under; Eats*.
- ★ ***What Do You Do with a Tail Like This?*** by Steve Jenkins and Robin Page Also - *Just a Second; Biggest, Strongest, Fastest; and more*.



The Five Senses

Create a simple “sensory station” using everyday objects. As your child explores, talk with him or her about their experiences while using the five senses.

ACTIVITY

- ★ **Touch:** Soft fur, scratchy sandpaper, smooth stones.
- ★ **Hearing:** Shake beans, popcorn, paper clips, etc. in yogurt containers. Ring bells. Crinkle cellophane, paper, foil.
- ★ **Smell:** Peppermint, vanilla, orange, spices.
- ★ **Sight:** Colors, patterns, large and small objects.
- ★ **Taste:** Lemon, sugar, salt, etc.





I-Spy: Make cards of construction paper and use them to match items of the same color.

Zoom in: Make binoculars or telescopes out of toilet paper and paper towel rolls to focus on looking at things.

Smelly art: Mix one part water to two parts Jell-o and paint with fruity smelling water colors. Or mix Kool-Aid with water (2 T) and paint with the mixture. When dry, scratch and sniff! (Warning, Kool-aid can stain.)



Taste Test: Compare two foods that look similar but taste very different (orange and lemon, sugar and salt, yogurt and sour cream, etc.) Describe how the substances smell, feel, look, sound (gently shake the plate) and finally, taste.

Listening Walk: Listen and describe sounds while on a walk. Use descriptive words like loud, soft, booming, roaring, ringing, raspy, banging. Sit in one place and do the same thing.



Sensory Tray: Fill an ice cube tray or egg carton with sandpaper, bark, grass, fur, net, silk, leaves, sponge, felt, etc.– talk about the different textures.

Earth Materials

Your child can experiment with how different earth materials change form when mixed with water and then left to dry.

VISIT A LOCAL SAND BOX OR DIRT PILE:

- ★ Bring lots of tools: shovels, buckets, cups.
- ★ Mix water and notice how water can change the different ways dirt and sand act.
- ★ Build a sand castle.
- ★ Dig holes and pour water into them.
- ★ Make mud pies and let them dry in the sun.





Mud pies and cakes: Use old containers to “bake” in and decorate with small pebbles, flowers, or leaves.

Mud houses: Use sticks for supports. Include tunnels, secret rooms, and even a moat.

Mud balls: Shape mud into balls by rolling the “dough” in your hands. Decorate with flowers, leaves, rocks, or small twigs. Stack to create a unique sculpture.



Rivers and dams: Dig a river in the dirt and add water. Build a dam to form a small puddle.

Purchase clay at an art store. Use to pinch or roll pots. Bake according to directions.



Recipe: 1 cup flour, 1/2 cup salt, 2 tsp. cream of tartar, 1 T salad oil, 1 cup water. Optional: add food coloring or non-toxic paint and dash of peppermint oil.

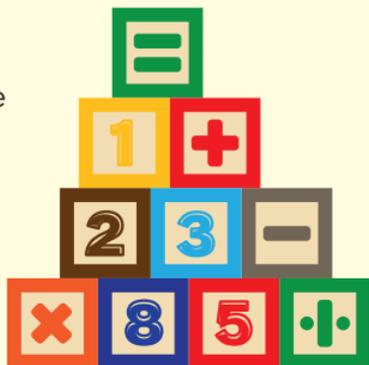
Combine all ingredients in sauce pan. Stir over medium heat until it becomes thick and forms a ball. Pour onto waxed paper and knead well. Stores well in airtight bag or container.

Blocks & Puzzles

Develop spatial awareness, pre-math, and science skills by playing with blocks and puzzles. Completing puzzles develops hand-eye coordination, critical thinking, motor skills, and memory.

ACTIVITY

Work together to build a tower with blocks. Encourage building vertically and horizontally. Ask your child to predict how high a tower can go.



Make a puzzle by gluing a photograph or picture of a magazine to cardstock, cereal box, or placemat. Cut it into four pieces, and ask your child to put it back together. Cut into more pieces to make the puzzle harder.





Build it again: After your child has built a structure, ask if you can copy it. Talk about the shapes while you build it. *"Look, I'm placing the cylinder on top of the rectangle shape just like you. Now I'm putting a cube on top!"* Next, you build something and ask your child to copy you.

Predict: Show your child a pattern you have made. Talk with him as you make the pattern: *"I put a square, a cylinder, a square, a cylinder. What do you think comes next?"* Encourage your child to create a pattern of her own.



Blocks and more: Include toy animals, people, or cars in block play. Talk about what type of structures they would live in or be in: a store, a garage, a house, a zoo. Then build that structure together.

Zoom: Use thick pieces of cardboard or wood pieces and encourage your child to build roads, ramps, or tunnels for toy cars. Ask *"How can we make a ramp? How can the cars go faster down the ramp?"* These questions introduce simple physics concepts.



Sorting & Matching

Match, order, and compare: these activities help develop observation, logic, and pre-math skills.

ACTIVITY

- ★ Collect a group of various objects.
- ★ Group them by color, size, shape, or function.
- ★ Put in an object that doesn't belong. Have your child guess which object doesn't belong and why.





Laundry: Sort clean socks by size or family member and then by color. Matching up pairs is an excellent way to practice visual discrimination skills. Or sort the clothes by color before washing. Put all the towels together, the sheets together, and separate anything else that you wash separately.

Put things away where they belong:

Putting silverware back into the drawer or putting toys back into the containers they belong in helps your child note shapes and groups. Using picture labels on the containers helps.



Line them up! Ask your child to line up plastic animals by size from smallest to biggest, and then biggest to smallest. Or line up stuffed animals or toy cars and trucks by size.

Does this belong? Have a group of objects (nuts & bolts, pasta, small toys, buttons) and two areas labeled "*belong*" and "*doesn't belong*." Use two hula hoops, string circles, or boxes. Pick a category like "*brown*" or "*round*," and decide if each object "*belongs*" or "*doesn't belong*." Older children can use cupcake tins or egg cartons to sort objects into groups that are "*alike*" in some way, choosing their own categories.



Nature

Take a walk in nature with your child. Then sit quietly in one spot to observe carefully the world around you. Notice and talk about what you observe with all of your senses.

ACTIVITY

How do you observe nature? Try looking like an owl, listening like a deer, and walking quietly like a fox! Look for:

- ★ Creatures or plants underneath rocks
- ★ Sap, bark, moss, or other items on trees
- ★ Sounds of nature (birds, running water, leaves blowing)
- ★ Different types of flowers and trees
- ★ Pond life (frogs, dragonflies, reeds)





Animals: Attract wildlife to your backyard with a bird feeder or flowers. Look online or ask at a nursery for help in choosing flowers for butterflies and hummingbirds and for tips on bird feeders.

Observing: Cut open different fruits and take out their seeds. Use a magnifying glass to look at them closely and compare shapes and sizes. Put toothpicks in an avocado seed and prop on the top of a cup of water to see if it will sprout. Observe the roots growing in the water and how the new plant sprouts.



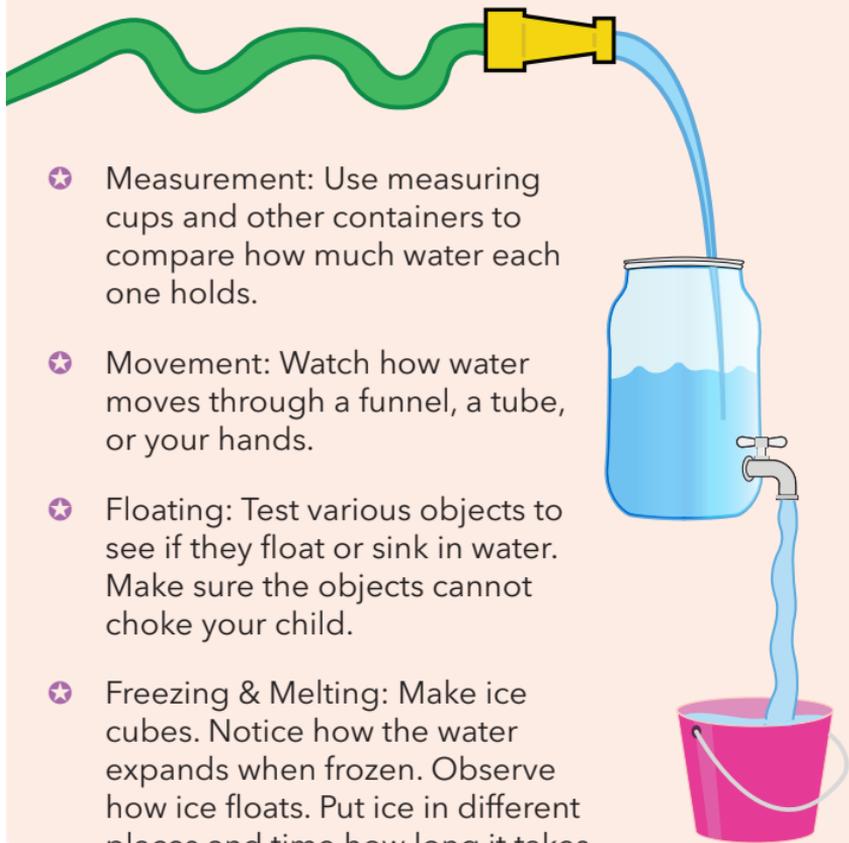
Planting: Buy a pack of flower or vegetable seeds. Follow directions on the package to plant and water the seed in a garden bed or flower pot. Water the seeds regularly and watch your plants grow.

Growing: Cut off the top 1" of a carrot and have your child plant it in a shallow dish filled with damp sand. Place the dish in a well-lit area and keep the sand damp. Watch how the carrot tops grow.



Water

Use objects around the house for a water adventure in the bathtub, sink, or small pool. Talk with your child about different water properties.



- ★ Measurement: Use measuring cups and other containers to compare how much water each one holds.
- ★ Movement: Watch how water moves through a funnel, a tube, or your hands.
- ★ Floating: Test various objects to see if they float or sink in water. Make sure the objects cannot choke your child.
- ★ Freezing & Melting: Make ice cubes. Notice how the water expands when frozen. Observe how ice floats. Put ice in different places and time how long it takes to melt.



Raisin Rising: Pour clear carbonated soda water into a clear glass. Drop four or five raisins into the glass. Notice how the air bubbles make the raisins rise and fall.



Mini Ocean: Fill a clear plastic liter bottle 3/4 full with water. Add blue food coloring, then add cooking oil. Leave about 1 inch at the top of the bottle. Notice how the oil and water do not mix. Tilt the bottle back and forth to cause a wave effect.



Runaway Pepper: Sprinkle pepper over the top of a cup of water. Put a dab of soap on your finger and touch the center of the pepper. Notice how the soap repels the pepper to the side of the glass.



Ice Magic: Fill a glass with water and add one ice cube. Lay a piece of string across the ice and try to pick up the ice with the string. Sprinkle a little salt over the ice cube, count to 10, and try again. Notice how the salt melts the ice just enough to bond around the string.

Math and Science is for babies, toddlers, and preschoolers! With help from a grown-up, young children enjoy many science explorations as they discover the world around them.

This activity booklet provides examples of explorations to try with children under 5 (older kids enjoy them as well!)
Enjoy the activities in the booklet once, twice, or three times.



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