



# RESOURCE GUIDE



# What is STEAM?

STEAM represents the combination of Science, Technology, Engineering, the Arts, and Math.

By drawing connections between all five subjects and using the scientific process or the engineer design process, children learn to; question, investigate, analyze, and evaluate. Through this process, we can help foster a lifetime love of learning and discovering.

	<p><b>Science</b> is the process of learning about and understanding the natural world. Experiments help develop science skills such as observing, describing what they notice and comparing results.</p>
	<p><b>Technology</b> refers to the use of tools, not just electronics. Tools are used to make jobs easier. Simple machines like scissors, gears, wheels, and pulleys, along with tools, such as digital cameras and tablets, are hands-on ways to experience technology.</p>
	<p><b>Engineering</b> is the process of building and designing something to solve a problem. Engineering activities regularly happens while playing with blocks as children learn and discover gravity, balance, shapes, and problem-solving.</p>
	<p><b>The Arts</b> make learning visible and helps communicate ideas. Open-ended process art activities allow for new ways to experiment. Music and Drama are also part of the "A."</p>
	<p><b>Math</b> is the process of understanding relationships among patterns, numbers, and shapes.</p>

# Science TOOLS

You don't need a fancy laboratory or expensive materials to get started with Science investigations. You can do a lot with simple materials you most likely already have available.

SIMPLE SCIENCE TOOLS	SIMPLE SCIENCE MATERIALS
Eye Droppers	Baking Soda
Pipettes (or Turkey Basters)	Vinegar
Magnifying Glass	Food Coloring or Liquid Watercolors
Tweezers	Water
Tongs	Salt
Plastic Tub	Ice
Plastic Cups	Soap
Measuring Cups	Baking Soda
Safety Glasses	Vinegar
Cookie Sheet/Plastic Tray	Corn Starch
Scale	Play Dough
Microscope	Nature Items

## Science focused STEAM Activities:

[Build a Bug Habitat](#)

[Science Rocks!](#)

[Easy Windy Art](#)

[Investigating Saturn's Rings](#)

[Shadow Superhero Signals](#)



# TECHNOLOGY TOOLS

Technology in reference to STEAM refers to the use of tools not just electronics. You do not need the latest computer, tablet, or app to encourage technological thinking for your child.

LOW TECH TOOLS	HIGH TECH TOOLS
Flash light	Computer
Electric Toothbrush	Tablet
Stop Watch/Timer	Smart Phone
Calculator	Digital Camera

## TECHNOLOGY FOCUSED STEAM ACTIVITIES

[How to Make a Digital Photo Number Book](#)

[Create a Digital Photo Alphabet Collage](#)

[Build a Digital Rainforest](#)

[Digital Flower Still Life](#)



# ENGINEERING TOOLS

Engineering is the process of building and designing something to solve a problem. Preschoolers are natural born engineers. Observe your child playing with blocks to see how you can extend and challenge their building skills.

Engineering Materials	Engineering Tools/Toys
Plastic Cups	Magnetic Tiles
Craft Sticks	Cardboard boxes
Toothpicks	Kid Size Tools
Marshmallows or Grapes	LEGO Bricks
String	Wooden Blocks
Sliced Pool Noodles or cut sponges	Tinker Toys
Recycled Materials (boxes, cardboard)	Foam Blocks
Tape	Play Dough

## ENGINEERING FOCUSED STEAM ACTIVITIES

[LEGO Boat Engineering Challenge](#)

[Build a Cave Engineering Challenge](#)

[Build with Unconventional Materials](#)

[Build a Rain Shelter \(for a Toy\) Challenge](#)

[Easy DIY Kid-Made Water Wall](#)



# ART TOOLS

Art experiences allow your child to explore how to make marks in new ways. Process art or open-ended art allows your students to express their own creativity and how to visually communicate their own original idea.

ART SUPPLIES	
<b>DRAWING</b>	<b>PAPER</b>
Crayons	Printer Paper
Markers	Construction Paper
Chalk	Cardboard
Colored Pencils	<b>FUN STUFF</b>
Permanent Markers	Beads
<b>PAINT</b>	Pipe cleaners
Watercolor Paint	Feathers
Liquid Watercolors	Ribbon
Washable Tempera Paint	Scissors
Washable Finger paint	Glue

## ART FOCUSED STEAM ACTIVITIES

[DIY Art Bot Drawing Machine](#)

[Tissue Paper Painting](#)

[Build a Bug Habitat Challenge](#)

[Monoprinting for Kids](#)



# MATH TOOLS

Math is an abstract subject but having “hands-on” objects to play with can help your child understand the concepts in a concrete way.

**Math is the process of understanding relationships among patterns, numbers, and shapes.**

COMMON MATH TOOLS	ADDITIONAL MATH TOOLS
Deck of Cards	Base Ten Blocks
Coins, Play Money	Linking Cubes
Counters (or a counting set)	Small Magnetic White Board
Dice	Number Line and 100's Hundred Chart
Ruler, Tape Measure	Pattern Blocks
Clock	Geoboard

## MATH FOCUSED STEAM ACTIVITIES

[Smash Math](#)

[Apple Printmaking with a Math Twist](#)

[Geometric Shape Robot Pillow](#)

[“Add” to Your Garden Math Game](#)

[Build, Draw and Create with Shapes](#)

# FOR more STEAM:

## VISIT THE BLOG

Take a peek at what STEAM Experiences we are currently working on and helpful resources by visiting the [Preschool STEAM blog](#).

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