Preschoolers Investigating STEM
Science - Technology - Engineering - Math

A Classroom and Family STEM Project Book

Early Childhood Care and Education Group
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Preschoolers Investigating STEM
A Classroom and Family STEM Project Book

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Abundant Life Childcare and Preschool
Advantage Montessori
AGAPE
Bremerton School District Preschool Programs
    Armin Jahr Elementary
    Crownhill Elementary
    Naval Avenue Early Learning Center
    View Ridge Elementary
    West Hills STEM Academy
Chico Child Care
Embassy Educational Center
Emmanuel Lutheran Childcare
Friends Childcare and Preschool
Kitsap Childcare and Preschool
Kitsap Community Resources Head Start/ECEAP
    Almira
    Bainbridge Island
    Carlton
    Crownhill Elementary
    Elizabeth Avenue
    National Avenue
    Naval Avenue Early Learning Center
    Park Avenue
    Poulsbo
    Rosemary Moen Full Day
    West Hills STEM Academy
    West Bremerton Early Learning Center
Little Sprouts Preschool
Seedlings Preschool
Sophia Bremer Child Development Center
Sycamore Tree Preschool
Sylvan Way Preschool
Tiny Tinkers Preschool
Wonders of Learning Preschool
Integrating Science, Technology, Engineering and Math (STEM) in Preschool opens a wonderful world of opportunities for our young children. STEM projects build on their natural curiosity and wonderment of their world. As adults we have the chance to build on that excitement and foster their love for the sciences. When adults encourage problem solving; provide opportunities for hypothesizing and predicting; and ask open ended questions to promote deeper thinking, children will have the opportunity to develop these skills needed to be successful in school and in life. Seventy-five percent of jobs in the future will be in a STEM field, technical knowledge is doubling every two years. By nurturing children’s curiosity and providing multiple intentional STEM opportunities you will be providing a solid foundation to build future STEM learning.

What could STEM look like for our youngest learners?

- **Science:** Nature walks, cooking, simple experiments (e.g., color mixing), pets
- **Technology:** Using scissors, utensils, coloring/drawing, talking about how things help us, using tools
- **Engineering:** Building, problem solving, taking boxes apart, drawing a design, following it and then studying it to see if it worked or what changes need to be made, creating structures with a variety of blocks
- **Mathematics:** Counting everything, matching clothes, sandwich shapes, positional words, sorting a variety of objects, comparing and contrasting many items

We created this book as a starting place for you to engage in lots of fun STEM projects for you and the children in your classroom or your own children.
Look For These Symbols

**Activity**
Name of activity

**Materials Needed**
A list of the materials needed to complete the activity.

**How/Describe**
Describes ways to complete the activity.

**Extensions**
This section provides additional approaches to use the same materials or learn about the concept in the activity.
Increasing

S.T.E.M.
Science-Engineering-Technology-Math

In Your Life

Outside
Activity
Plant Plants

Materials Needed
- Garden or Containers/Pots
- Plants or Seeds

How/Describe
- Plant different types of flowers, vegetables, or other plants. Compare the different conditions needed for different types of plants.
- Create a blueprint of your planting location. Draw the container or ground location, and mark where you are going to plant the plants. Encourage the use of accurate shapes and colors when drawing; for example, if the container is a rectangle, draw a rectangle and don’t color the soil blue unless it really is! This scientific drawing leads to making accurate journal entries and model representations later on.
- Think about asking questions such as:
  - How deep do the seeds need to be planted?
  - How far apart from one another?
  - Do they require different types of soil?
  - Do they need different types of soil?
  - Do you want to start planting seeds or plants that have already started growing?

Extensions
- Use food from the garden to cook with or eat raw.
- Explore different sized plant pots, scoops, seeds, plants, and see what happens.
- Explore watering different amounts of water or different types of liquids, or planting in different types of soils.
- Journal growth of the plants, measure using popsicle sticks, paper clips, or pieces of string.
- Take a plant out of the soil and carefully remove the dirt to explore the root structure—look at different plants such as carrots, beans, or grass.
**Activity**
Observe a tree or other plant from winter to spring by drawing or taking pictures.

**Materials Needed**
- Paper
- Pencil
- Crayons
- Camera

**How/Describe**
- Select a plant or tree near your house. On a regular basis (weekly, monthly, biweekly), take a picture or draw what the plant looks like. If drawing, use authentic colors to describe what you see! Date the drawings or photographs and put them in chronological order in a journal.

**Extensions**
- Collect leaves from the plant you are observing and save them along with the photographs or drawings.
- Observe an area of land or variety of plants, compare how the different plants change throughout time and differ from one another.
Activity
Observation Walks, Shape and Color Walks

Materials Needed
None Required

How/Describe
• Determine what you will be focusing on this observation walk. Things you hear, see, smell? Are you looking for particular colors or shapes? Or do you just want to go out and see what finds you?

Extensions
• If desired, a journal or notebook.
• Collect specimens from your walk and identify.
• Collect and sort items found by color, size, texture, etc.
• Make toilet paper binoculars for added fun.
• Star gazing on a clear night.
Activity
Build a Bridge Over a Puddle

Materials Needed
• Sticks and branches
• Rocks, pebbles
• Puddle or hole
• Leaves, branches

How/Describe
• Use a variety of materials to build a bridge of some form over a puddle or hole, these materials can be ones you have found at the puddle location or brought from home.

Extensions
• Make a variety of bridges with different materials.
• Try for different heights or lengths of bridges.
• See if you can make a bridge that will hold different weights, such as toys, rocks, or other materials.
Activity
Build a Kite or Other Flying Object

Materials Needed
- Straws, sticks, or popsicle sticks for the frame
- Plastic bags, paper, coffee filters, or other material
- Glue, tape, or other fastening material
- String

How/Describe
- Build the frame for your kite, you can make a standard ‘t’ shape, or try different styles such as closed shapes like an octagon or other open shapes like an ‘x’.
- Cover your frame with the material of your choosing, and attach it to your frame
- Attach a long string to the bottom.

Extensions
- Make different designs with various materials, and compare which ones fly higher, farther, land first, land last, etc.
- Record your results in a journal or notebook.
Activity
Make a Bird Feeder or Build a Bird House

Materials Needed
• 2 liter bottle, wood, or other container light enough to hang
• Pinecone, hoop, or other form to ‘stick’ food to
• Peanut butter, birdseed
• String or rope

How/Describe
• Bird House:
  - Use the 2 liter bottle, container, or scraps of wood.
  - Cut a hole in the bottle or container that is large enough for the birds you are trying to attract, or nail/glue the wood scraps into whatever design you are wanting for their house.
  - Attach the rope and find a suitable location for hanging.

• Bird Feeder:
  - Container method — find a suitable empty container like a bottle and cut a hole into it, attach string or rope, hang, and fill with birdseed.
  - Pinecone Method — use a pinecone, hoop, or other item, attach string, smear with peanut butter, roll in bird seed, and hang from a suitable location.

Extensions
• Buy or check out from the library a book about local birds, record which ones come and visit
• Make several and place in different locations, see if there are similarities to locations that birds prefer, for example mostly shady, very open, or proximity to people.
Activity
Measure Rain

Materials Needed
• Container
• Measuring system (inches, tablespoons, etc)
• Any other construction material desired

How/Describe
• Select a container that is clear and has a flat bottom.
• Either mark on the container itself or a popsicle stick consistently spaced marks, these can be measured by inches, tablespoons of water, bottle caps, etc.
• Place the container outside where it will collect rain, but not run off from a roof, tree, etc.

Extensions
• Measure different types of rainfall, such as drizzly days, standard rain, or downpours.
• Observe what happens to the rainfall collected in the container on sunny days.
Activity
Scavenger Hunt

Materials Needed
- List of items to search for (can also do indoors)
- Pencil, crayon, marker

How/Describe
- Draw pictures of items that they are to search for.
- Use the pencil to mark off as they are found.
- Can have the items brought back or draw a picture of where they are found.

Extensions
- Categorize items (toys, circles, red things) and count how many are in each category.
- Organize objects from smallest to largest or heaviest to lightest
- Make a map to find one item that is hidden, count steps from one room to another as they go.
**Activity**
Make Blocks

**Materials Needed**
- Natural materials such as wood, sticks, or logs
- Man-made materials such as food boxes, milk cartons, or packing boxes
- Tape
- Tools for cutting

**How/Describe**
- Clean out and tape man-made items shut, can stuff with paper to make slightly more sturdy.
- Cut natural materials to various lengths to make blocks.

**Extensions**
- Do not tape the largest box shut and use to store the other blocks.
- See how tall you can build, or how many blocks you can use before the structure falls down.
- Are there differences in building with the man-made items versus the natural items?
- Make blueprints and designs prior to building, or record your work through drawing after you have finished constructing.
**Activity**

**Measurement**

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**Materials Needed**

- Various items or locations to measure
- Measuring tool
  - Preschoolers work best with non-standard units of measurement, such as paper clips, shoes, or books

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**How/Describe**

- Find the length, width, or space between different objects or locations.
- Teach that to properly measure, you need to go in a straight line, with no spaces in between your measuring objects.

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**Extensions**

- Compare the length of different objects by placing them next to each other. Remember to have the bottoms lined up to get an accurate comparison of length!
- Go on a hunt. Have a target object (for example a shoe) and look around for objects that are bigger or smaller than that target object. Record items found by drawing or writing them on a piece of paper.
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In the Kitchen While Cooking
Activity
Baking

Materials Needed
• Varies depending on recipe
• Measuring cups and spoons
• Bowls

How/Describe
• Follow a favorite recipe, or make non-edible mixtures following the recipes in the back of this book.
• Show your child how to measure accurately, that the scoops are filled completely, not overflowing, etc.
• When mixing wet and dry ingredients, compare what happens. What happens to the dry mixture? It is easier or harder to stir? If making a non-edible recipe, see what happens if you were to add more liquid or less.
• If your recipe calls for baking, look at the mixture before it goes in the oven. Use your phone to take a picture, and compare to when it is done baking.

Extensions
• Explore the differences with hot and cold temperatures. Put an ice cube in a cup of cold water, room temperature water, and very warm water. What happens?
• Try placing a variety of different liquids into the freezer, such as water, juice, soap, or Karo Syrup. What happens? Do they all freeze solid? Does it take some liquids longer to freeze than others?
Activity
Mix Different Types of Liquids to See Change

Materials Needed
• A variety of liquids such as oil, water, vinegar, soap, Karo Syrup, anything else in the house

How/Describe
• Put the same amount of water in different cups/bowls.
• Mix in one spoonful of the other liquids and stir gently.
• Observe what happens? Are there some liquids that don’t mix, turn different colors, or have other changes?

Extensions
• Try mixing different dry ingredients such as pepper, flour, salt, herbs, dirt, etc. into water. Are there solids that dissolve in the water? What happens if you vary the amount of liquid and solid?
Activity

Compare Differences in Appliances

Materials Needed

• Mixers, blenders, microwaves, and other appliances in your kitchen

How/Describe

• Describe what each appliance (tool) does and how it works
  - For example, a refrigerator is used to keep food cold so it does not rot, a blender is used to cut, chop, or puree items faster than we can do by hand.

• Give the function, and ask your child to guess what tool/equipment you are thinking of. For example, “I am looking for something that can make food get hot really fast” — a microwave, because it gets food hot like a stove or oven, and can do it very fast.

Extensions

• Put different types of liquid in each one and see the difference when you finish using it.
  - Freeze juice in ice cube trays and see what happens if you put some in the blender versus the microwave.

• Design a new type of appliance that can do a task, for example something that will peel and slice bananas for us, or an ice cream maker that also puts sprinkles on top.
Activity
Egg Drop

Materials Needed
- A variety of recycle/trash bin items such as: cardboard, styrofoam, newspaper/magazines, plastic cups, etc.
- Tape, string, or other materials to hold the container together
- Tub or bucket to drop the egg into that can be easily cleaned

How/Describe
- Build a container that will keep the egg safe when you drop it from a table, chair, or other height.
- Put your egg into the container, and push it off of a table or chair into the empty tub or bucket. See if your egg broke!

Extensions
- If your egg breaks, decide how to change your design next time.
- Try different heights and see if the container will work for some but not others.
- Use a hardboiled egg and see if that makes any difference in its ability to survive a crash.
Activity
Exploring Silverware

Materials Needed
• Spoons, forks, knives

How/Describe
• Count and compare the amounts of different silverware. Are there more forks or spoons?
• Look at size. Are there any differences? Line them up from shortest to tallest.
• Think about the function of the silverware and how that influences its design. Would a fork work well for eating soup? Why or why not?
• Sort the silverware when it is clean and put each item where it belongs.

Extensions
• Compare different utensils, such as spoons to cook, serve, and eat with. How are they different? Or look at utensils we use to eat and ones we use to cook with. How are they the same or different?
• Set the table, making sure everybody gets one of each utensil, plates/bowls, etc.
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With "Loose Parts" and Collections
Activity
Take-Apart Center

Materials Needed
• Unwanted or Broken appliances, toys, flashlights, etc
• Tools such as Screwdrivers, Pliers, Hammers, etc
• Box or container

How/Describe
• Cut off any electrical cords prior to giving to child.
• Use tools to take apart broken appliances or other items.
• Explore the interior of items.
• Place parts in a box to help contain mess and save for exploring or putting together later.

Extensions
• Take the item apart and draw pictures of what it looks like inside.
• Use the parts to build new creations or practice putting items together again.
Activity
Static Electricity

Materials Needed
- Balloons
- Feathers

How/Describe
- Rub the balloon on a carpet or sweater.
- Try to pick up a feather with it.

Extensions
- Try using a hairbrush, brush your hair a few times and see if you can pick up a feather or tissue. Explore a variety of different brushes and papers.
- When pulling a sweater or shirt over your head, see if you can listen for the crackle. Do this in front of a mirror and see what happens to your hair.
Activity
Comparing and Contrasting

Materials Needed
• Collections of different items (spoons, rocks, pinecones, etc)

How/Describe
• Look at the assortment of different items. How are they the same? How are they different?
• Ways to compare items could include color, shape, length, function, weight, patterned, or natural versus man made.

Extensions
• Use hoops or yarn to make a venn diagram and sort objects.
**Activity**

**Estimate**

**Materials Needed**
- Containers
- Stuff to put in the containers

**How/Describe**
- Look at the items and the container.
- Guess how many of your identical objects will fit in the container and write it down.
- Count as you put them in and see if your estimate was accurate.

**Extensions**
- Use different containers or items and make different estimates.
- Estimate how many steps it will take to get from one place to another.
- When making estimates, talk about logical guesses. A logical guess is one that is going to be pretty close to the right answer, for example, estimating 6 golf balls will fit into a peanut butter jar instead of 53.
- As you are counting objects into the container, look at your guess. Do you still think it is accurate or do you want to change it?
Activity

Sorting

Materials Needed

- Variety of items

How/Describe

- Find ways to group the objects. Ways to sort could include color, shape, length, function, weight, textures, or man made.
- Describe the way that the items were sorted, discuss how they are the same and different.

Extensions

- Help fold and sort the laundry. Match the socks, sort by clothing item or who they belong to.
- Use the same items and try to sort them a different way.
Activity
Measurement

Materials Needed
• Various items or locations to measure
• Measuring tool
  - Preschoolers work best with nonstandard units of measurement, such as paper clips, shoes, or books

How/Describe
• Find the length, width, or space between different objects or locations.
• Teach that to properly measure, you need to go in a straight line, with no spaces in between your objects.

Extensions
• Compare the length of different objects by placing them next to each other. Remember to have the bottoms lined up to get an accurate comparison of length!
• Go on a hunt. Have a target object (for example a shoe) and look around for objects that are bigger or smaller than that target object. Record items found by drawing or writing them on a piece of paper.
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Messy Play: Art and Sensory Exploration
**Activity**
Color Exploration

**Materials Needed**
- Water
- Food coloring
- Bowls
- Clean medicine dropper or turkey baster
- Ice cube tray or muffin pan

**How/Describe**
- Put water with a little bit of food coloring into bowls.
- Use the medicine dropper or turkey baster to transfer smaller amounts of water to the ice cube tray or muffin pan.
- Mix different colors to see what happens.
- Mix different amounts of the colors to see if they are the same, for example in one spot have three squirts of blue and one squirt of yellow, in another have one squirt of blue and one squirt of yellow.

**Extensions**
- Use shaving cream and food coloring or paint and mix the different colors
- Mix colors into frosting when cooking.
- Put food coloring into water with white flowers, leaving some of the flowers in plain water. Observe what happens with the flowers over a couple of days.
Activity
Homemade Crayons

Materials Needed
• Broken or old crayons
• Muffin pans or silicone baking molds
• Oven
• Nonstick cooking spray or oil

How/Describe
• Spray nonstick cooking spray or rub oil into a muffin pan or silicone baking molds.
• Put old or broken crayon chunks into the pan. Keep all the same color or mix it up.
• Put in the oven at about 200 degrees until melted.

Extensions
• Make sun catchers using crayon shavings by placing a variety of shavings between two pieces of waxed paper and iron until the shavings are melted.
Activity
Painting Outdoors

Materials Needed
• Old Paint Brushes
• Buckets of Water
• Surface Material

How/Describe
• Paint on different outdoor surfaces using the old paint brushes and water.
• Paint shapes, letters, numbers, or pictures.

Extensions
• See how long it takes for the water to evaporate, or disappear from different surfaces or different locations (vertical walls, the ground, under shade, in the bright sun).
• Draw a picture, write letters, shapes, or numbers using chalk, and paint over it with water to erase.
Activity
Measuring

Materials Needed
• Different sized measuring cups, bowls, spoons, and containers
• Bathtub, sink, or watertight container
• Water

How/Describe
• Measure water from different sized measuring cups. Does it take the same number to fill the same container?
• Use the same measuring cup to fill different containers. How does that compare?

Extensions
• At bath time, measure water before getting in and again after, compare the two measurements. Why do they differ?
• In a sink or at bath time, add bubbles while the water is pouring in and draw what it looks like. Next time, add bubbles after tub is filled, draw a picture, and compare the difference.
• Get two differently shaped containers (one tall and skinny, the other short and squat). Put one cup of water into each container. Discuss if one container has more water than the other. Typically young children will say that the container that is taller has more water. Playing around with the same amount of water in different containers will help children develop the understanding that no matter the size and shape of container, one cup of liquid is the same amount.
Activity
Make a Boat

Materials Needed
- Foil
- Container, sink, or bathtub
- Water

How/Describe
- Make a boat using foil.
- Explore different boat shapes — crumpled ball type, long and flat on the bottom, canoe shaped with high sides, etc.
- Try out the different styles of boats and see which work better.

Extensions
- Make boats using different materials such as drift wood and rope/string, newspaper or construction paper.
- Challenge your boats to carry different ‘passengers’, such as pennies, action figures or small toys.
**Activity**
Sink or Float

**Materials Needed**
- Variety of objects
- Watertight containers, sink, or bathtub
- Paper
- Crayons/markers
- Water

**How/Describe**
- Gather a variety of objects.
- Using the paper, make a list of the objects. Go over whether you think they will sink or float. Leave space after each object to write whether it sunk or floated.
- Test each object and record what it did.

**Extensions**
- Look at gathering big items that will float and small ones that will sink.
- Try materials that will take a longer time to sink, such as paper, dry sponges, or a washcloth.
- Explore what happens to an unpeeled orange when placed in water. Peel it, and see what happens!
Activity
Make Rain Sticks

Materials Needed
- Empty paper towel or toilet paper roll
- Uncooked rice
- Foil
- Rubber bands or tape

How/Describe
- Put rice in the empty tube.
- Cover the ends with foil and secure with rubber bands or tape.
- Turn it over and listen to the sounds made.

Extensions
- Draw a picture of your design prior to building it, or make a design on the empty tube.
- Explore how using different materials such as beans or pebbles will create different sounds.
- Try different materials on the ends of the tubes such as wax paper, construction paper, or newsprint. Does it make a difference?
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In Your Life

While Building
Activity
Building Forts

Materials Needed
• Varies depending upon type of fort

How/Describe
• Build forts inside using pillows, blankets, boxes, brooms, tables, chairs, etc.
• Build a fort outside using shrubs, trees, tarps, sheets, fallen logs or branches, etc.

Extensions
• Draw a blueprint of your fort prior to building it and then document any changes made while building the fort.
• Make different sizes of forts, and compare size, function, shape, materials used, etc.
Activity
Building Bridges

Materials Needed
• Varies depending upon type of bridge

How/Describe
• Outdoors, use different materials and build a bridge over puddles, drainage ditches, or other small channels of water.
• Indoors, build a bridge that spans the sink or goes up and over a toy road for cars.

Extensions
• Explore the use different types of materials such as gutters, PVC pipe, wrapping paper tubes, etc.
• Challenge yourself to build bridges that can hold various weights, such as toy cars, action figures, or other small toys.
Activity
Make Structures

Materials Needed
• Hard items such as uncooked spaghetti, toothpicks, popsicle sticks, or clothes pins
• Soft items such as marshmallows, gum drops, jelly beans, or playdough

How/Describe
• Use the softer items to connect the harder items and create the framework or the structure.
• Build a base first that is a square, triangle, or rectangle, then build upwards and outwards.

Extensions
• See if you can build structures that are of varying heights or lengths.
• Try building using a set number of materials, such as only 20 popsicle sticks and 5 jumbo marshmallows and see how tall you can make it.
Activity
Pulleys

Materials Needed
• Rope
• Bucket
• Tree branch, ladder rung, upper bunk bed frame, or other bar

How/Describe
• Attach the rope to the bucket, and swing over the tree branch, ladder rung, bunk bed frame, or bar.
• Put items in the bucket, and raise up and down.

Extensions
• Explore the weight of different objects and how easy or hard it is to move them up and down.
• Stand in different locations, such as right under the branch, three feet back, or sideways. Does that make a difference in how easy or hard it is to pull the bucket up and down?
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Craft and Sensory Recipes
**Cloud Dough**

**INGREDIENTS:** Food Coloring, 1 cup water, 1 ½ cups vegetable oil, 6 cups flour

**HOW TO:** Add food coloring to water. Combine water, oil, and flour in large bowl. Knead well. If necessary, add more water or flour in small amounts until the dough is soft and elastic. To store, keep in an airtight container. This dough is greasy and can be slippery when it falls on the floor.

**Cornmeal Playdough**

**INGREDIENTS:** 2 cups cornmeal, 2 cups flour, ½ cup oil

**HOW TO:** Mix all ingredients, adding water to reach the desired consistency.

**Puff Dough**

**INGREDIENTS:** 1 cup flour, 1 cup water, 1 bag cotton balls

**HOW TO:** Mix flour and water together to make a paste. Roll cotton balls in paste and carefully lift out, allowing excess to fall off. Form into desired shapes on a baking sheet. Bake for 1 hour at 325 degrees. Can be painted when cool.

**Shampoo Dough**

**INGREDIENTS:** ¾ cup flour, ¼ cup white glue, ¼ cup shampoo

**HOW TO:** Combine all ingredients in a bowl. Knead dough, and add more flour as needed. Store in an airtight container.
Ultimate Dough

INGREDIENTS: 2 cups flour, 1 cup salt, 1 teaspoon cream of tarter, 2 tablespoons oil, 2 cups water, food coloring or Kool-Aid packet

HOW TO: Mix all ingredients in a saucepan over medium heat, stirring constantly until dough leaves sides of pan. Remove from the pan, and when cool knead until desired consistency.

No Cook Playdough

INGREDIENTS: 2 ½-3 cups flour, ½ cup salt, 1 tablespoon alum, 2 cups water, 3 tablespoons oil, food coloring or kool-aid packet

HOW TO: Mix together dry ingredients. In another bowl, measure 2 cups water, food coloring/kool-aid packet, and 3 tablespoons oil. Heat in the microwave until water starts to boil. Slowly mix the hot water into the dry ingredients. When cool, remove from bowl and knead.

Clean Mud

INGREDIENTS: 2 rolls toilet tissue-torn into pieces, 1 ½ bars ivory soap-shaved, 2 quarts warm water

HOW TO: Combine all ingredients in a dishpan or large bucker, knead by hand until soft and gooey.

Flubber

INGREDIENTS: ½ cup warm water, 2 cups Elmer’s glue, food coloring 4 teaspoons borax, 1-1/3 cups warm water

HOW TO: Mix the two solutions separately. Slowly pour one mixture into the other, stir gently. Should make a gak-like consistency.

Cornstarch Mix

INGREDIENTS: Cornstarch, water

HOW TO: Put cornstarch in a bowl, explore the feel of the powder. Add water approximately 1 tablespoon at a time and mix, feeling the change.
Beluga Bubbles

INGREDIENTS: 1 cup warm water, ¼ cup blue dishwashing liquid, 1 teaspoon salt

HOW TO: Combine all ingredients, mix until the salt dissolves.

Bubble Recipe

INGREDIENTS: 2 cups Joy or Dawn dishwashing soap, 6 cups warm water, ¾ cup white Karo syrup

HOW TO: Combine and shake, let settle for several hours. This recipe gets better with time!

Cinnamon Dough

INGREDIENTS: Equal parts cinnamon and applesauce

HOW TO: Mix applesauce and cinnamon together, forming a fairly stiff dough. Roll out dough to ¼ inch thick pieces and cut into shapes with cookie cutters. Use a straw to make a hole in the top, place on a wire rack to dry. Takes several days to air dry, or can bake on parchment paper at 200 degrees for 1-2 hours.

Shaving Cream Playdough

INGREDIENTS: 2 cups cornstarch, 1 can shaving cream

HOW TO: Mix both ingredients on the table or in a bowl. Add cornstarch as needed to make a dough.
Website Resources

- **Office of the Superintendent of Public Instruction:** [www.k12.wa.us/earlylearning/stemlessons.aspx](http://www.k12.wa.us/earlylearning/stemlessons.aspx)
  Four Early Learning STEM Units, complete with lesson plans, activities, and book suggestions, developed by Katrina Jones.

- **Asia Citro author of The Curious Kids Science Book and 150+ Screen Free Activities for Kids:** [www.funathomewithkids.com](http://www.funathomewithkids.com)
  Many pages of ideas for STEM projects for young children; sensory ideas, including blogs with more ideas and links to other preschool STEM ideas.

- **Boston Children’s Museum:** [www.bostonchildrensmuseum.org](http://www.bostonchildrensmuseum.org)
  Sprouts STEM Teaching Guide has activities for Preschoolers as well as more information on STEM activities in general.

- **Global Cardboard Challenge:** [www.imagination.is/our-projects/cardboard-challenge/](http://www.imagination.is/our-projects/cardboard-challenge/)
  This is a kid’s challenge to use cardboard, recycled materials and imagination to build amazing structures. Inspired by the “Cains’s Arcade” video.

- **Growing a Jeweled Rose:** [www.growingajeweledrose.com](http://www.growingajeweledrose.com)
  Fun and educational activities sorted by type of play, seasons and ages for teachers and families.

- **Little Bins For Little Hands:** [www.littlebinsforlittlehands.com](http://www.littlebinsforlittlehands.com)
  Many hands on STEM activities for children, includes building activities, slime, recipes, lots of seasonal ideas and more.

- **Peep and the Big Wide World:** [www.peepandthebigwideworld.org](http://www.peepandthebigwideworld.org)
  Math and science games to play; also the animated series for teaching science and math to preschoolers.

- **Playdough to Plato:** [www.playdoughtoplato.com/stem-activities-for-kids](http://www.playdoughtoplato.com/stem-activities-for-kids)
  40 fun STEM activities for children.

- **Sesame Street:** [www.sesamestreet.org/parents/topicsandactivities/toolkits/stem](http://www.sesamestreet.org/parents/topicsandactivities/toolkits/stem)
  The Little Discoverers section contains resources and information for the classroom and families for STEM activities. This site includes videos demonstrating experiments, games and activities.

- **Sid the Science Kid:** [www.pbskids.org/sid](http://www.pbskids.org/sid)
  Activities, games, videos and activities to print out for families and teachers.
Preschoolers Investigating STEM

Science - Technology - Engineering - Math

A Classroom and Family STEM Project Book

Early Childhood Care and Education Group
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