

Explorers Preschool Curriculum

# Let's Explore Bubbles



Developed by  
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Program Coordinator  
2020

Arkansas State University Childhood Services  
JoAnn Nalley, Director





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# Let's Explore Bubbles

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If Explorers Preschool Curriculum is new to you, or if you would like to review big ideas about this curriculum, see the Using Explorers section at the end of this packet.

An expanded Getting Started guide can also be found under the resources tab at [www.ASUChildhoodServices.org](http://www.ASUChildhoodServices.org)

# Let's Explore: Bubbles

Delicate bubbles drift on the breeze. It can feel powerful to children to blow bubbles – and even more powerful to pop them! In addition to bottled bubble solution from the toy store, bubbles can be found every time we wash our hands, our dishes, and our clothes.

This topic might be a fit for you if...

- Bubble wands are a popular plaything.
- You've heard children asking questions or wondering aloud about bubbles.
- You've noticed children experimenting with soapy bubbles while playing with bubble wands and/or while washing hands.
- You'll have ample access to your outdoor play area in the weeks to come and the freedom to get a little messy.

## Let's Talk About Bubbles

Use words like these during everyday conversations with children.

**bubble**  
**detergent**  
**disappear**  
**drip**  
**fragile**  
**hollow**  
**pop**  
**reflect**  
**round**  
**shiny**  
**solution**  
**sphere**  
**wand**

**Prepositions:** over, under, above, below, next to.

**Words to describe size and quantity:** tiny, huge, many, just a few.



## Bubble Collectibles

Collect some of these interesting objects to investigate with children. Families can help!

**bubble wands of all shapes and sizes**  
**bubble wrap**  
**whisks, rotary egg beaters**  
**bubble machine**  
**baby bath tub**  
**a variety of scrub brushes**

## Preparing to Explore Bubbles

1. With your teaching team, think about, and discuss the following questions.
  - What experiences have our children had with bubbles so far? What background knowledge do they most likely have?
  - What resources could be helpful as we explore this topic with children? Are there any special places we might go, or special people who might visit our classroom, as we learn about bubbles?
  - What are some things that children might learn and do as we explore bubbles? What new words or concepts could they begin to understand?
2. Let families know that the group is interested in bubbles. What can they tell you about their family's experiences with bubbles? Think together about ways that families can be involved. For example, a parent might be interested in baking bread with children (yeast bubbles!), or a grandparent might have a bubbling aquarium pump to show to the group.
3. Gather books and materials to add to learning centers and to use during small group experiences. You'll find suggestions on the pages that follow.



## Learning Center Extensions - Bubbles

Here are some examples of materials that can be added to your learning centers to support children's exploration of bubbles during daily free play times.

Not all materials need to be added at the same time. Choose materials based on what you have available and the ages, interests, and abilities of the children in your group. You may also choose to add more – or different – materials over time during your investigation.

For more information on incorporating materials into your classroom, see the *Learning Everywhere* section of the Getting Started packet.

### Art Area

- Sponge rollers with easel paint
- Hollow, round objects – such as biscuit cutters or clean, empty yogurt cups – for stamping patterns with paint or in playdough
- After being introduced to children, materials from the **Bubble Prints** and **Bubble Wrap Painting** small group learning experiences may also be offered for free choice use.

### Water Play Area

- Baby shampoo or bubble bath soap to mix into water
- Whisks and egg beaters for mixing
- Sponges, washcloths, scrub brushes, silicone dish scrubbers
- Items that children can bathe or wash: plastic baby dolls, trucks, dishes, or toy animals
- After being introduced to children, materials from the **Investigating Bubbles in Water 2** and **Fluffy Foam** small group learning experiences may also be offered for free choice use.

### Fine Motor/Table Toy Area

- Long strips of bubble wrap to pop
- Teacher-created paper “bubbles” to match or sort by size and/or color

## Learning Center Extensions - Bubbles

### Dramatic Play Area

- Baby bath props: small tub, baby brush and washcloth, baby bath toy, empty bubble bath or baby shampoo bottles
- Stuffed pet grooming props: small tub, spray nozzle, empty pet shampoo bottle, pet brush, stuffed toy dogs and cats
- Empty dish soap and laundry detergent bottles, dish gloves, dish brush
- Supermarket fliers and/or coupons that include soaps or detergents

### Block Building Area

- Photos of a car wash and/or a book about a car wash, such as  
*Curious George: Car Wash*  
H.A. Ray, HMH Books for Young Readers, 2013
- Loose parts that could be added to block structures to build a carwash or in other creative ways: spools, dry kitchen sponges, cardboard boxes, scrub brush refills, paper towel tubes, fringe-cut cloth or foam

### Science Area

- Soapy sensory bottle – colored water and dish soap sealed in a large, clear bottle. Children can shake the bottle to make bubbles, then observe what happens over time as the bottle rests.
- Close-up photos about bubbles, such as those included in this book
- A tiny bottle of bubble solution (party favor size) with a child-safe mirror
- Factual books about bubbles, such as:

*How to Make Bubbles*  
Erika L. Shores, Capstone Press, 2011

*Pop! A Book About Bubbles*  
Kimberly Bradley and Margaret Miller, Harper Collins, 2001

### Other

After being introduced to children, materials from the **Bubble Tray** small group learning experience may be offered as a special, stand-alone learning center.

## Book Area

Add some of these books and/or your favorite books with bubbles.

*Big, Bad Bubble*, Adam Rubin and Daniel Salmieri, Clarion Books, 2017\*

*Bubble Trouble*, Tom Percival, Bloomsbury USA, 2015

*Chavela and the Magic Bubble*, Monica Brown and Magaly Morales, Clarion Books, 2010\*

*Five Little Monkeys Wash the Car*, Eileen Cristelow, Clarion Books, 2004

*Get Out of My Bath*, Brita Teckentrup, Nosy Crow Books, 2018

*Hogwash*, Karma Wilson and Jim McMullen, Little, Brown Books, 2011\*

*King Bidgood's in the Bathtub\**

Audrey Wood and Don Wood, HMH Books for Young Readers, 2010

*Knuffle Bunny*, Mo Willems, Hyperion, 2004

*Mrs. Wishy Washy's Farm*, Joy Cowley and Elizabeth Fuller, Puffin Books, 2006\*

*The Piggy in the Puddle*, Charlotte Pomerantz and James Marshall, Reading Rainbow Books, 1989\*

*The Pigeon Needs a Bath*, Mo Willems, Hyperion Books for Children, 2014\*

*Trouble Gum*, Matthew Cordell, Square Fish, 2018

*The Tub People*, Pam Conrad, HarperCollins, 1999

**\*Recommended read-aloud to share with groups of children.**

### Talking About Books

As you share books with individuals, small groups, or larger groups of children, ask questions like these:

- **Beginning:** Let's look at the cover of this book. What do you notice?
- **Middle:** How do you think (this character) feels? Why?
- **End:** Did this book remind you of any other books that we have read?

Talking together about books is an important part of every preschool day!

## Conversations about Bubbles

Use prompts like these as you talk with children throughout the day. For more information on incorporating planned conversations into your daily schedule, see the *Learning Every Day* section in the Getting Started packet.

### Bubble Conversations

daily - during meals, play times, transitions, or group times

Try asking one or two questions like these when you have opportunities to talk with individuals, small groups, or the larger group of children.

- What are some things that you know about bubbles?
- What are some things that you wonder about bubbles?
- Why do you think that bubbles pop so easily?
- What would you do if you blew a bubble and it never popped?
- What is your favorite thing about bubbles?
- What is the biggest bubble you have ever blown? Can you show me with your hands?
- Where do you think our bubbles go when they float away?
- How is a bubble like a ball? How is a bubble different from a ball?

At least once a week, make a chart to write down children's answers to a question. Talk with children one, two, or a few at a time to collect answers. Later, read the written responses back to the group. Post the chart where it can be viewed by children and families.

What do we know about  
 bubbles?

Bubbles go up high. - Donovan  
Bubbles start with 'B', like me. - Bella  
Bubbles pop and pop and pop. - Eli  
Don't drink the bubbles. - Sofia  
They help with washing things. - Ava C.  
Bubbles are soap and water. - Jervae  
Bubbles pop when they touch pointy things! - Alexander  
Bubbles float, but then they come down to the grass. - Mason  
Bubbles pop. - Grace  
Bubbles have rainbows in them. - Ben  
I got bubble soap in my eyes and I cried. - Kaylin  
Fish make bubbles. - Sam  
My sister had bubbles at her wedding. - Ajay  
Bubbles are round. - Ava W.

## Conversations about Bubbles

### Bubble Polls

1-3 times per week – at arrival or group time

Choose a question from the list below or think of one of your own. Make a chart with the question and two possible responses, using picture cues when possible. Invite children to write their names or place name cards to respond to the question.

- Do you like to blow bubbles?
- Which do you like better? Blowing bubbles? Or popping bubbles?
- Would you rather blow lots and lots of tiny bubbles – or one gigantic bubble?
- Which kind of bubbly hand soap do you like better? Lavender? Or lemon? (Modify for two soaps you have on hand. Offer both soaps at the sink this week.)
- Have you ever blown a bubble with bubble gum?

Would you rather...	
 Blow lots of tiny bubbles?	 Or blow one giant bubble?

### Sharing Our Experiences So Far

several times a week - during meals or play times

As you talk with individuals and small groups of children, tell about your own, positive experience with bubbles. You might talk about an interesting trip to a car wash or laundromat, giving your dog a bath, or learning how to blow bubbles in a swimming pool.

Listen attentively as children tell about their experiences, too. Help children make connections between shared experiences. (“It sounds like you and Milo have both seen the bubble machine outside the children’s library!”)

## Songs, Rhymes, and Games about Bubbles

These playful songs, rhymes, and games can be incorporated into group times and transition times.

### **Tiny Turtle** - *traditional rhyme*

I had a tiny turtle. (cup hands as if holding a tiny turtle)  
His name was Tiny Tim.

I put him in the bathtub,  
To see if he could swim. (swimming hand motions)

He drank up all the water, (make drinking motions)  
He ate up all the soap. (make eating motions)

And now my tiny turtle,  
Hiccups just like so:

Bubble, bubble, bubble, (move hands apart...)  
Bubble, bubble, bubble, (move hands apart wider...)

Bubble, bubble, bubble, (and wider)  
Bubble, bubble...POP! (clap loudly for "pop")

### **Pop Go the Bubbles** - *to the tune of Pop Goes the Weasel*

We dip our wands into the soap,  
And wave them in the air.  
Bubbles go here,  
And bubbles go there,  
Bubbles everywhere!

Bubbles up high, and bubbles low,  
Bubbles everywhere.  
We chase them, catch them,  
Oh, so much fun -  
POP go the bubbles!

Try this song as a circle game. A few children at a time can come to the middle to pop bubbles as the group sings.

## Songs, Rhymes, and Games about Bubbles

### Bubble Circle

Here's a simple way to help children gather in a large circle:

Have everyone come together in the middle and take hands.

Pretend that you are all part of a bubble that is getting larger and larger.

Children can step backward until the circle is nice and wide, then drop hands.

### Round and Round *-to the tune of Wheels on the Bus*

Use your fingertip to draw a tiny circle as you sing.

A teeny, tiny bubble goes round and round,

Round and round, round and round.

A teeny, tiny bubble goes round and round,

Down to the ground.

Next, use your hand and whole arm to draw a large circle as you sing:

A great, big bubble goes round and round,

Round and round, round and round.

A great, big bubble goes round and round,

Down to the ground.

Invite children to think of other kinds of bubbles as you add more verses to the song.

### Handwashing Song *- to the tune of Row, Row, Row Your Boat*

Wash, wash, wash, your hands

Play this handy game.

Rub and scrub, scrub and rub

Germs go down the drain.

(Repeat twice while lathering hands, then rinse.)



### Bubble Playlist

Bubbles – The Laurie Berkner Band

Rubber Ducky – Sesame Street

Splish Splash (I Was Taking a Bath) – Bobby Darin

Wash Your Hands – Shawn Brown, The Super Fun Show

Presents: Transitions

## Small Group Learning Experiences – Bubbles

Share learning experiences like the ones on the following pages with small groups of children each day. Groups should usually consist of three to seven children, rather than the whole group at once. Small group experiences may take place as children choose to join a teacher during free play time, or there might be a special small group time included in the daily schedule.

Use these questions to guide you as you choose daily learning experiences.

- **What is it about bubbles that these children seem most interested in or most curious about?** Choose experiences that invite children to pursue their interests and seek answers to their questions.
- **What are our learning goals for individual children and for the group as a whole?** Choose experiences that support specific objectives for learning. Strive to create well-rounded plans that support all domains of development.
- **How can we extend children’s thinking and learning?** Choose activities that can be connected to children’s experiences so far. Remember that it is often appropriate to re-run planned experiences. Offering an experience two or more times over a few days or weeks invites children to gain expertise and deepen their understanding.



Pair planned activities with ample opportunities for open-ended, free choice exploration in the classroom and outdoors.

Take bubble solution and wands outdoors every chance you get. Notice how children try out new strategies and integrate new knowledge as they play.

## Making Bubble Solution

Let's use a picture and word recipe to make homemade bubble solution.

### Materials

- |  |   |
|--|---|
| <input type="checkbox"/> Copy of the bubble solution recipe          | <input type="checkbox"/> Measuring spoons and liquid measuring cup  |
| <input type="checkbox"/> Plain liquid dish soap, such as Dawn or Joy | <input type="checkbox"/> Large spoon for stirring   |
| <input type="checkbox"/> Liquid glycerin* or corn syrup              | <input type="checkbox"/> Something to mix and store your bubble solution in, such as a lidded pitcher or a beverage jug with spigot |
| <input type="checkbox"/> Water                                       |   |

Invite children to think about where bubble solution comes from. Many children have seen bubble solution for sale at the store. Have children ever made their own bubble solution? Would they like to make some bubble solution today?

Show children the bubble solution recipe. Explain that a recipe helps us know exactly how much of each ingredient to add to get the best results. For bubble solution, our ingredients are dish soap, glycerin, and water.

As you work through the recipe, involve children in several of the following ways.

- Looking at words on the recipe. What does “solution” mean? What does “homemade” mean? (Children might suggest that you should call this “school-made” bubble solution!)
- Offering children turns to measure and pour.
- Using fingers to count cups/spoonsful added so far and to answer the question, “How many more do we need?”
- Noticing the numbered steps and thinking about the sequence of the recipe. What did we do first? What did we do next?
- Looking at the symbol for “stir” on the recipe. What do children think it means?
- Talking about the instructions to stir “slowly” and “gently”. What do those words mean? Why do children think that the instructions suggest stirring this way?
- Noticing the fine print at the bottom of the recipe and making plans to use the bubble solution tomorrow.

## Making Bubble Solution (cont.)

### Helpful Hints

Each small group can make their own container of bubble solution, or each group can add to the solution that the class has made so far.

### Including Every Explorer

- Match tasks to the abilities of the children in the group. For example, a child with limited use of hands may be able to help stir with a large spoon while you hold the container steady.
- Match questions and conversations to the ages and abilities of children in the group. A younger or less experienced group might take part in a short, simple group time where they count and pour. Older, more experienced preschoolers might spend more time because they also want to look at printed words on the recipe and on the soap and glycerin containers.
- If the group includes a child or children with limited vision, be sure to describe what you see on the recipe page: “There’s a picture of a water faucet and – one...two...three...four...five – five measuring cups. What do you think that might mean?”

### More to Do (optional)

Make copies of the bubble solution recipe to send home with children.

This experience offers special opportunities to build and strengthen:

**Cognitive Development – CD 2.3, CD 2.4, CD 3.2**

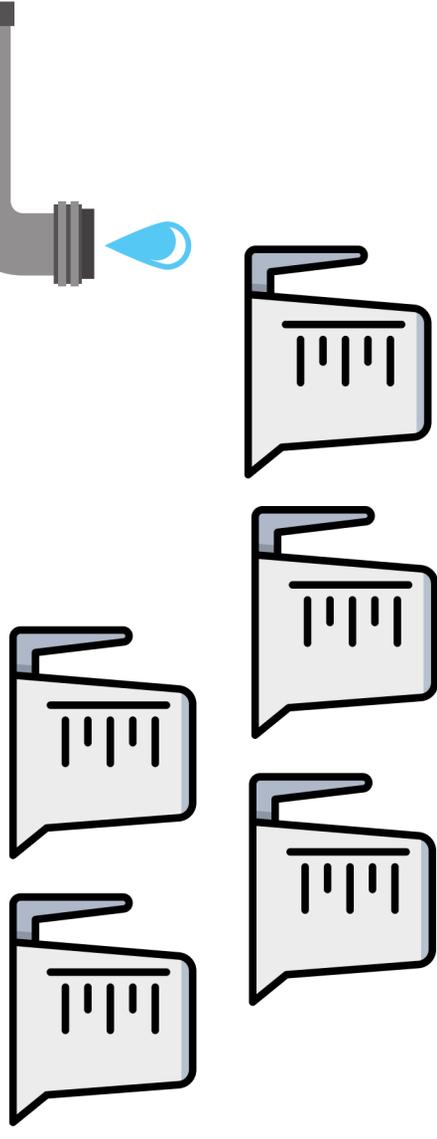
**Emergent Literacy – EL1.1, EL 3.2**

**Mathematical Thinking – MT 1.1, MT 1.2, MT 3.1**

\*Glycerin is a non-toxic syrup made from plant oils. It is sometimes used to treat burns and rashes and can be found near the first aid supplies at your local pharmacy or discount store. In a bubble solution, glycerin slows evaporation. This helps bubbles last longer.

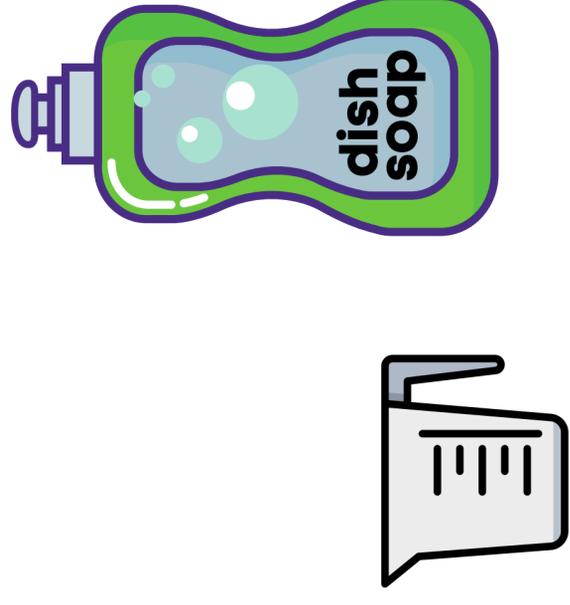
# Homemade Bubble Solution

1.



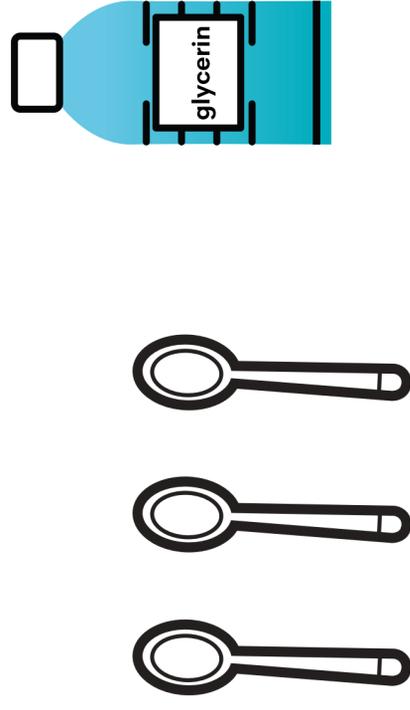
First add 5 cups of water.

2.



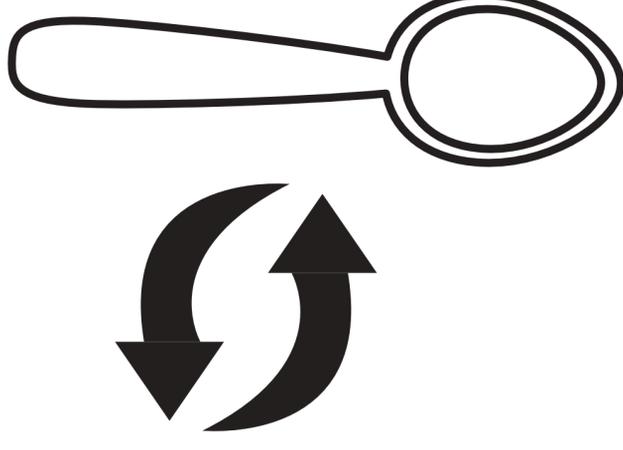
Next, add 1 cup of dish soap.

3.



Then add 3 tablespoons  
of glycerin.

4.



Last, stir slowly and gently.





## Investigating Bubble Wands

What makes a good bubble wand? Let's investigate using some common household objects.

### Materials

- Bubble solution
- Wide, open container for bubble solution, such as a bowl or bin
- Bubble wand
- Towels or washcloths for drips and spills
- Kitchen utensils: solid and slotted spoons, solid and slotted spatula
- Clean plastic mesh fly swatter
- Paper and marker for charting

Encourage children to talk about what they know about bubble wands. Show children a bubble wand and encourage them to describe it.

Show children two, large kitchen spoons: one slotted, and one solid. What do they think about using these as bubble wands? Encourage children to describe the spoons and make predictions. Do they think that the spoons will work as bubble wands?

Invite a child to test the solid spoon by dipping it in the bubble solution. Let extra solution drip back into the container, then wave the spoon through the air. What do children observe? Next, have a child test the slotted spoon in the same way.

Children will most likely observe that the slotted spoon makes bubbles when waved through the air, but the solid spoon does not.

Invite children to examine the slotted and solid spatulas. Based on their experience with the spoons, what do they predict about the spatulas? Ask, "Why do you think that?" to encourage children to explain their thinking.

After children make predictions, test the two spatulas. What do they notice?

Show children the fly swatter.

How is the fly swatter similar to the slotted spatula? How is it different?

Do they think this will make a good bubble wand? Why or why not?

Make a chart of children's predictions before testing the flyswatter.

Look once more at the commercial bubble wand, alongside the household objects that worked well for making bubbles. What do all of these objects all have in common?

## Investigating Bubble Wands (cont.)

### Helpful Hints

Look for inexpensive kitchen utensils at your favorite dollar store.  
You can use a funnel to pour the leftover bubble solution back into the bottle.

### Including Every Explorer

With all children, we encourage – but never force – participation. Some children with sensory sensitivities do not like to get their hands wet, messy, or sticky. Offer other ways for them to be involved. In this activity, they might make tally marks with a pencil to record the group’s predictions or use a camera to capture photos or video.

### More to Do (optional)

- Challenge children: can they figure out how to create a bubble wand using just their hands and fingers?
- As you conclude this activity, enlist children’s help in wiping up drips and spills. Remind them that wiping up spills helps keep the classroom safe.
- If children were going to design and invent a bubble wand, what would it look like? Invite them to draw pictures of their ideas. Or, invite children to design bubble wands using chenille stems or other art materials.
- Provide the kitchen utensils and clean flyswatters for outdoor bubble play. Notice whether children recreate your experiment.
- Place the solid and slotted utensils in your family sign-in area. At arrival or departure time, can children explain to families which utensils make the best bubble makers, and why?

### Did You Know?

Activities like this one empower children to think like scientists. They investigate the properties and attributes of objects. They make comparisons and apply what they have learned so far to new situations. Learning to observe and think in this manner builds strong foundation skills for science, technology, and engineering.

This experience offers special opportunities to build and strengthen:

**Language Development – LD, 1.1, LD 2.1**

**Mathematical Thinking –MT 3.1, MT 4.1**

**Science and Technology – ST 1.1, ST 2.1, ST 3.1, ST 3.2**

## Bubble Trays

Let's slow down to look closely at how bubbles form, how they look, and how they act.

### Materials

- |   |  |
|---|--|
| <input type="checkbox"/> Bubble solution  | <input type="checkbox"/> Flashlights                 |
| <input type="checkbox"/> Large metal baking pans (aka cookie sheets) – 1 per child in the small group | <input type="checkbox"/> Camera                      |
| <input type="checkbox"/> Non-bendy drinking straws  | <input type="checkbox"/> Towels for drips and spills |

### Activity

Show children the drinking straws. Remind them that people sometimes use straws to suck in liquids that they want to drink. Have they ever had a drinking straw in a cup from a restaurant?

Explain, “Today, you’ll be using straws differently. We don’t want to drink bubble solution, so today you’ll blow out through the straws instead.” Practice briefly.

Pour bubble solution into each pan. Invite children to experiment with placing the end of their straw in the bubble solution and blowing gently to make bubbles. After children have had some time to experiment freely, invite them to try several of these challenges:

- What is the biggest bubble you can make?
- What is the smallest bubble you can make?
- Can you make a cluster of tiny bubbles?
- Can you make a bubble inside a bubble?
- Can you show me how to make one like yours? I’ll watch while you demonstrate.
- Can you fill your entire tray with bubbles?

As children work, take photos of their bubble creations. You can display these in the classroom later and/or share them with families.

Notice the sounds that you make as you blow bubbles. If you listen very carefully, you might even be able to hear a bubble pop!

Notice the different colors that swirl on the surface of your bubbles. Try shining flashlights onto the bubbles to get a better look.

## Bubble Trays (cont.)

### Helpful Hints

You may be able to borrow baking pans from your program's kitchen. Or, ask families or colleagues to loan baking pans for this activity.

### Including Every Explorer

- Worried about big spills? Museum Putty – also known as Earthquake Putty – is a non-toxic product that is usually used to secure fragile objects to shelves. In this case, you could use the putty to attach the baking sheets to your table before filling them with the bubble solution.
- With younger children and children with special needs, look for larger straws made for smoothies or bubble tea. These are easier for children to hold.
- Eye protection, such as child-sized safety goggles, may be used if there are children who may not understand how – or be physically able – to blow gently.
- If you're concerned that children may suck through the straws, use a pin ahead of time to make a small hole near the top of each straw. This will help prevent children from accidentally swallowing bubble solution.

### Did You Know?

The bubbles we blow in the air are round spheres, like a ball. The half-round shape of a bubble on a tray is called a hemisphere!

This experience offers special opportunities to build and strengthen:

**Cognitive Development – CD 2.1, CD 2.2**

**Physical Development and Health – PH 2.1**

**Mathematical Thinking –MT 1.1, MT 3.1**

**Science and Technology – ST 1.1, ST, 3.2**

## Bubble Prints

Let's try capturing bubbles with beautiful prints that we can keep long after the bubbles pop.

### Materials

- |   |   |
|---|---|
| <input type="checkbox"/> Bubble solution  | <input type="checkbox"/> Protective table covering, such as a vinyl tablecloth or old towel |
| <input type="checkbox"/> 3 or more pie pans, bowls, or cups                       | <input type="checkbox"/> Smocks, aprons, or large t-shirts to protect children's clothing   |
| <input type="checkbox"/> Non-bendy drinking straws                                | <input type="checkbox"/> White paper  |
| <input type="checkbox"/> Liquid watercolor paint, tempera paint, or food coloring |   |

Fill each pan, bowl, or cup about half full of bubble solution. Add about a tablespoon of paint or just a few drops of food coloring to each container. (Don't add too much food coloring, or it will stain children's skin.)

You might opt to make a container of each primary color: red, yellow, and blue. Or, experiment with mixing various combinations of blue, yellow, and green to make shades of teal, turquoise, and cyan.

Encourage children to experiment with blowing bubbles in the containers. Soon, the containers will be overflowing with mounds of bubbles! Show children how to hold a sheet of paper by the edges, gently lowering it down over the top of the container to pop the bubbles. Notice the prints that the tinted bubbles make on the paper.

Children can experiment with layering different colors on their papers. Invite them to try mixing colors or making patterns if desired. What do they notice as they work? When finished, set papers aside to dry flat.

### Including Every Explorer

- With younger children and children with special needs, look for larger straws made for smoothies or bubble tea. These are easier for children to hold.
- Eye protection, such as child-sized safety goggles, may be used if there are children who may not understand how – or be physically able – to blow gently.
- Holding the edges of the paper may be challenging for children with limited use of hands. If a child seems frustrated, propose teamwork: "You blow the bubbles, and I'll catch them (on the paper.)"

## Bubble Prints (cont.)

### More to Do (optional)

- Photograph the children as they work. You can display these photos alongside the finished prints.
- Ask children to recall the steps of making bubble prints. Can they help you create an instruction sheet for other classes? Write down what children say as they talk about what to do first, next, and last.
- Collect paint sample strips from the hardware store. Have fun reading the names of the various blue-green colors with children as they match them to their dried bubble prints. You may wish to mix a set of blue-green easel paints to allow children to continue this investigation as they work in the art center.

This experience offers special opportunities to build and strengthen:

**Cognitive Development – CD 1.1, CD 2.1**

**Physical Development and Health – PH 2.1**

**Creativity and Aesthetics – CA 2.1**

## Investigating Bubbles in Water, part 1

What makes a bubble a bubble? Let's deepen our knowledge as we explore fizzy water.

### Materials

- |  |   |
|--|---|
| <input type="checkbox"/> Drinking water in a clear bottle or pitcher | <input type="checkbox"/> Drinking straws  |
| <input type="checkbox"/> Drinking cups – 2 per child                 | <input type="checkbox"/> Club soda or seltzer water* with label removed from the bottle |

Talk with children about what they know about bubbles so far. If they were describing bubbles to someone who had never seen one, what would they say? Here are some things you might think about together:

- Most bubbles are air – or another gas - trapped inside a liquid, like water.
- Bubbles naturally form a round (sphere) shape.
- Most bubbles are very fragile – which means that they pop very easily.

When we want to play with bubbles, we often use a soap solution. That's because the soap makes bubbles thicker and more flexible, so they last a little bit longer. But are all bubbles made of soap solution?

Show children the two, clear containers of drinkable water: one carbonated and one plain. Invite children to pour small tasting portions of both kinds of water. Explore together:

As children look closely, what differences do they notice?

If they lean down and listen closely, what sounds do they hear?

Do they predict that water with bubbles will taste different from water without bubbles?

Try sips of both kinds of water. Invite children to describe what they notice and compare the two waters. This could be a good time to try out words like “fizzy” and “carbonated”.

Think together about how bubbles get into carbonated water. Children may guess that there is soap in the carbonated water, but it wouldn't be safe to drink soapy water. If children seem interested, explain that specialized machines are used to push gas into the water. This gas makes the tiny bubbles that we see when a bottle of carbonated water is opened. You might even watch a short [video clip](#)\*\* about equipment that carbonates water.

\*Club soda and seltzer water can be found at most supermarkets. They are carbonated waters that do not contain sweeteners or flavors.

\*\*While children probably won't understand the information about carbon dioxide gas in this linked clip, they may enjoy seeing the equipment in a soda bottling factory. When using video platforms with advertisements, always start videos ahead of time, pausing at the beginning of the content that you want children to see. This helps protect children from potentially inappropriate advertisements.

## Investigating Bubbles in Water 1 (cont.)

Offer children straws to experiment with blowing bubbles in their cups of still water. How are these bubbles different from the bubbles in the carbonated water?

If children have used straws to blow bubbles in bubble solution, how was that different from blowing bubbles in plain water?

### Including Every Explorer

Some children are reluctant to try new foods and drinks. Don't hurry or force participation. Instead, give the child time and space to watch you and their classmates. Check back with the child to offer another chance to participate if they seem interested. We can let the child know that it is OK for them to change their mind.

Open-ended questions encourage children to try out new words and express their own ideas. However, some children may not yet be able to answer open-ended questions. This may include children who are chronologically or developmentally younger than peers, children who feel shy, and children who are English Language Learners (ELL) – along with children who have limited communication skills. Adapt the activity to include questions that can be answered by gesturing, nodding, or giving a short response.

This experience offers special opportunities to build and strengthen:

**Cognitive Development – CD 1.1, CD 2.4**

**Language Development – LD 1.1, 2.1, 3.1**

**Science and Technology – ST 3.1, ST 3.3**

## Investigating Bubbles in Water, Part 2

Let's explore more about bubbles made without soap.

### Materials

- |   |   |
|---|---|
| <input type="checkbox"/> Tools that push air, such as turkey baster, bulb syringe, empty squeezable sport bottle, balloon pump* | <input type="checkbox"/> Tools that do not push air, such as a ladle, dish brush, tongs, paintbrush |
| <input type="checkbox"/> Water in large bowls or bins.  | <input type="checkbox"/> Two baskets, trays, or placemats for sorting                               |
|   | <input type="checkbox"/> Towels for drips and spills  |

This activity works especially well after **Investigating Bubbles in Water, Part 1**. It builds upon conversations and investigations from that experience.

Before beginning this activity, mix all of the tools together.

Ask children to recall things that they know about bubbles so far.

What do they recall about their earlier experience with bubbles in plain (non-soapy) water?

Show children the basket of tools.

Do they see any tools that they predict work well for making bubbles in water?

Do they see any tools that they predict will *not* work well for making bubbles in water?

Encourage children to explain their thinking.

Invite children to experiment freely with the tools and water, following their own ideas. Some children may want to try scooping or stirring with the tools, in addition to bubble-making. Provide uninterrupted time for children to work, staying near and showing interest in children's work, but not taking over. There may be opportunities to support children as they practice social skills related to asking for turns and making trades.

After this initial investigation time, encourage children to talk with one another what they have discovered so far. ("Samuel, can you show Emma what you figured out about the balloon pump?") Invite children to help you test out each tool and sort them into two groups.

- Tools that work well for making bubbles in water
- Tools that do not work well for making bubbles in water. What do the tools that work well have in common?

\*Balloon pumps are simple plastic pumps that expel air when a cylinder is pushed up and down. They can be found in the party supply section of most discount stores.

## Investigating Bubbles in Water 2 (cont.)

### Including Every Explorer

If your group includes children with limited vision, try adding a little blue food coloring to the water. This may make it easier for them to see the movement of the water.

Be sure to include some tools that every child can use successfully. Large, soft bulb syringes are easy to hold and squeeze.

Provide especially close supervision with children who may try to drink the play water. It can be helpful to have an appropriate alternative – such as a drinking cup or water bottle - available. To reduce confusion, have the child move away from the investigation area if they want a drink.

### More to Do (optional)

- Add tools that push air to your water play area.
- During outdoor play, try a bicycle pump with a container of water. It will be challenging for children to figure out how to stand on the footrests and pump the handle while a friend places the nozzle in water, but they will be rewarded with big, satisfying bubbles.
- If your program has an aquarium, look for bubbles around the aquarium pump. A colleague or family member may also have a clean aquarium pump that they can demonstrate for children.



### Did You Know?

This learning experience includes time for children to experiment with new materials before the teacher initiates a more structured sorting activity. Provide plenty of time for unstructured dabbling and exploration any time children encounter new art or sensory materials.

This experience offers special opportunities to build and strengthen:

**Social and Emotional Development, SE 1.2, SE 3.2**

**Language Development – LD 2.1, LD 3.1**

**Science and Technology – ST 1.2, ST 2.1, ST 3.1**

## Fluffy Foam

Let's investigate foam: a dense mound of tiny, fluffy bubbles!

### Materials

- Baby shampoo – 1 per two small groups
- Whisks
- Electric mixer with beaters or a whisk attachment
- Large bowl or bin
- Water
- Towels for drips and spills
- Cups, rollers, or other props for playing with foam
- Magnifying glasses (aka hand lenses)

This small group experience can take place indoors or outdoors. Plan on one bottle of baby shampoo for every two small groups. Each small group will use half a bottle. Thus, if you are planning to have four small groups, you'll want two bottles of baby shampoo.

Empty half a bottle of baby shampoo into a large bowl or bin. Have children add 4 tablespoons of water. Invite children to try stirring with whisks. Stir and stir until children say that their arms feel tired, or until they seem to be getting just a little bit bored. You'll begin to see some bubbly foam forming.

Introduce the mixer and explain how the mixer's motor spins the beaters around very, very quickly. Explain that it is important not to touch the mixer while it is spinning; the quickly moving parts could hurt fingers.

Ask children to take one big step back from the table and put their hands behind their backs. Let them know that the mixer might be noisy. If they don't like the noise, they can put their hands over their ears. Build playful anticipation by counting down, "3...2...1...Go!" – before starting the mixer.

Work the mixer to the bottom of the soap solution and all around the bowl, until you have a big, fluffy mound of foam. Unplug the mixer and place it out of reach, then invite children to investigate the foam.

After children have explored with fingers and hands for several minutes, provide a basket of simple props to try, such as cups, scoops, a squeegee, and paint rollers. Play alongside children and talk about what you notice. Invite children to talk about what they notice, too.

After some exploration time, invite children to look at the foam using magnifying glasses. Can they see tiny bubbles?

## **Fluffy Foam (cont.)**

### **Including Every Explorer**

If any children in your group are sensitive to dyes or fragrances, use a gentle “free and clear” baby shampoo. It may help to talk with the child’s family about the soaps that they use at home.

Some children do not like to get their hands messy. Offer utensils – such as long-handled spoons or paintbrushes – for investigation. Some children may prefer not to interact with the foam at all, and that’s OK.

If a child in your group is sensitive to noise, they may be disturbed by the mixer – even when they are playing elsewhere in the room. Headphones can help reduce noise.

### **More to Do**

- Add the leftover foam to your water play area or take it outdoors for a water play day with sprinklers.
- Collect pump dispensers from foaming hand soap. After washing them well, fill the dispensers with water, a few drops of mild dish soap, and a few drops of food coloring. Add the colored foam dispensers to your water play area.

### **Did You Know**

Technology is all about using tools and machines to make work easier. In this case, the mixer is an important tool. So why not just use the mixer right away? Because we want children to recognize the helpfulness of the mixer, we first set the stage for them to realize that mixing the foam by hand is hard work!

This experience offers special opportunities to build and strengthen:

**Cognitive Development – CD 1.1, CD 1.2, CD 2.3**

**Physical Health and Development, PH 3.2**

**Science and Technology – ST 1.1, ST 3.2**

## Foamy Fruit Dip

Let's create a foam that we can eat. Always wash hands and clean tables before food experiences.

### Materials

- |   |  |
|---|--|
| <input type="checkbox"/> Heavy whipping cream*              | <input type="checkbox"/> Large mixing bowl                 |
| <input type="checkbox"/> Sugar                              | <input type="checkbox"/> Fresh strawberries and/or bananas |
| <input type="checkbox"/> Vanilla extract (optional)         | <input type="checkbox"/> Butter knives                     |
| <input type="checkbox"/> Electric mixer                     | <input type="checkbox"/> Plates and napkins                |
| <input type="checkbox"/> Measuring cup and measuring spoons |  |

Let children know that you'll be making an edible foam – whipped cream – to try on fruit today. Look together at the heavy whipping cream. Help children pour 1 cup of cream into a large bowl. Does cream this look foamy? Ask children if they can think of a way to make the cream foamy. They may talk about mixing air into the cream and/or using a mixing tool.

Introduce the mixer and explain how the mixer's motor spins the beaters around very, very quickly. Explain that it is important not to touch the mixer while it is spinning; the quickly moving parts could hurt fingers.

Ask children to take one big step back from the table and put their hands behind their backs. Let them know that the mixer might be noisy. If they don't like the noise, they can put their hands over their ears. Build playful anticipation by counting down, "3...2...1...Go!" – before starting the mixer.

Mix on medium speed for about 1 minute. Pause and invite children to lean in to look closely. Is the cream changing? Help children add 1 tablespoon of sugar and 1/2 teaspoon of vanilla extract to the cream.

Encourage children to continue to watch closely for changes as you mix at medium-high speed. Within the next few minutes, the cream will become thicker and thicker, holds its shape in peaks when you lift the beaters away. Stop mixing and unplug the mixer and place it out of reach. If possible, cover the whipped cream and place it in the refrigerator.

\*Cartons of heavy whipping cream can be found near the milk at your supermarket. For this recipe, you want the cream to be very cold. Take it out of the refrigerator right before you use it or store it in a cooler with ice packs. Cover and refrigerate leftover whipped cream.

## Foamy Fruit Dip (cont.)

Invite children to choose fruits that they would like to slice. Before giving children butter knives, discuss these safety rules:

- **Knives stay at the table.** Children may stand up or sit down to work, but should not carry knives around the room.
- **Knives are tools, not toys.** It is not safe to play with knives.
- **We use two hands to cut.** One hand holds the knife, and the other hand holds the food. Show children how to make a “C” shape with the hand that holds the food.

Although butter knives are dull and very unlikely to cut children’s fingers, learning knife safety fosters responsible and safe behavior. Stay close to provide encouragement and direct supervision as children slice fruit. When finished, show children how to serve scoops of sweet whipped cream for dipping fruit. As you enjoy this snack, look closely to notice tiny bubbles in the whipped cream foam.

### Including Every Explorer

If a child in your group is sensitive to noise, they may be disturbed by the mixer – even when they are playing elsewhere in the room. Headphones can help reduce noise.

If a child in your group has a dairy allergy or sensitivity, purchase commercial non-dairy whipped cream that this child can eat with their fruit.

Bananas are much easier to slice than strawberries, making them a better pick for children with emergent fine motor skills. Canned pears are also easy to slice.

Some children are reluctant to try new foods. Gently invite and encourage – but do not force - participation. Some children may just want to smell, lick, or take a tiny taste of a new food. All of these can be valuable first steps toward more adventurous eating.

This experience offers special opportunities to build and strengthen:

**Cognitive Development – CD 2.4, CD 3.1**

**Mathematical Thinking – MT 3.1**

**Physical Health and Development - PH 2.1, PH 2.2, PH 3.1, PH 3.2**

## Investigating Cleaning Machines

Let's visit places in our program where soap and detergent bubbles help us clean.

### Materials

- Clipboards with white paper – one per child
- Pencils or washable black fine-tipped markers – one per child
- Investigator's Kit: backpack with a tape measure, ruler, flashlights, magnifying glasses, a small notepad, and pencil

This investigation should be planned and prepared ahead of time. Small groups of children will take walking field trips to visit places in their program where dishes and/or clothes are washed. **Adults should visit this space ahead of time to check for safety hazards and should talk with staff in these spaces to plan the best time of day for children to visit.**

Talk with children about what they know about soap. We use soap to clean our hands and the tables where we eat. Do people use soap (or detergent) to clean other things?

Invite children to go with you to investigate a “cleaning machine” – a dishwashing sink, dishwasher, or a washing machine for clothing. Let them know that you'll meet someone there who can show them how the machine works and answer their questions.

Before you go, make a list of children's questions.

What are they curious about? What would they like to find out?

Walk together to visit a cleaning machine. Have a staff member show and tell the children about what happens here. For example, a dishwashing sink might have a plug to close the drain and faucet with a sprayer for rinsing dishes. Pipes at the bottom of the sink carry away dirty water afterward, while clean dishes are placed on a rack nearby. Pay special attention to when and how detergent is used, and encourage children to ask their questions. Tools in your investigator's kit may help answer children's questions.

Show children where they can safely sit to sketch the cleaning machine. Some children may wish to draw everything, while other children focus on one component, such as a detergent bottle. Because this space is not designed for children, you'll want to provide very close supervision throughout your visit.

When you return to the classroom, take a few moments to debrief by talking together about what you saw and heard. Children may want you to write descriptive captions on their sketches. Older groups of preschoolers may be interested in telling classmates about their investigation as part of a regularly scheduled whole group gathering.

## Investigating Cleaning Machines (cont.)

### Helpful Hints

This activity could take place over several days, with different small groups going out to investigate each morning and afternoon.

### Including Every Explorer

Think of ways to provide extra supervision for children with more impulsive behavior. This could be a good opportunity for family volunteers. The activity can be shortened as needed to ensure that every child has a successful experience.

Place markers can be used to help children find a safe place to sit and sketch. Use pieces of blue painter's tape, non-slip placemats, or rubber spot markers, which are available from most early childhood supply vendors.

Some children's sketches may not be identifiable to adults yet, but every line on the page has meaning to the child. Praise effort and invite all children to tell about their work. Avoid judging or comparing one child's work against another's. If you have a child with limited use of hands, offer adaptive drawing tools that are easier to hold and handle.

### More to Do (optional)

- On another day, visit a different cleaning machine in your program. Compare the two cleaning machines.
- Encourage families to help children look for cleaning machines at home and out and about in their community. Examples include a floor cleaning machine at the supermarket, equipment at a carwash, or a dog groomer's tub.
- Work together to use a large cardboard box to make a pretend washing machine for your dramatic play center. Pair it with a small laundry basket of doll clothes, socks to match, or towels to fold.

This experience offers special opportunities to build and strengthen:

**Cognitive Development – CD 1.1, CD 2.1, CD 2.3, CD 3.2**

**Mathematical Thinking – MT 3.1**

**Social Studies – SS 1.1**

## Bubble Wrap Painting

Let's examine bubble wrap. What will it feel like to paint on bubble wrap?

### Materials

- |   |  |
|---|--|
| <input type="checkbox"/> Large pieces of bubble wrap (plastic packing material)           | <input type="checkbox"/> Bowls or trays of store-bought or homemade finger paint |
| <input type="checkbox"/> Smocks, aprons, or large t-shirts to protect children's clothing | <input type="checkbox"/> White paper   |
|   | <input type="checkbox"/> Masking tape  |

Look together at the bubble wrap. What do children notice?

Most of the bubbles that you have investigated so far have been air enclosed in water or soap solution. How is bubble wrap different?

Place a large piece of bubble wrap on the table and invite children to use masking tape to help you secure the edges. Invite children to experiment with spreading finger paint on the bubble wrap.

How does it feel to paint on bubble wrap? Does it feel the same as painting on paper? Or different?

It's OK to mix the colors and to spread more paint over sections that have already been painted. Children may want to talk about how the paint mixes and blends as they work.

Show children the white paper and invite them to try making prints by pressing the paper down on top of the painted bubble wrap. Set aside to dry flat.

### Helpful Hints

To make homemade finger paint, combine 1 cup of cornstarch, 1/3 cup of sugar, 2 tsp of salt, and 4 cups of water in a saucepan over medium-low heat. Cook and stir until the mixture is thick and creamy. Cool, divide into portions, and dye with a small amount of food dye or liquid watercolor paint. This paint should be refrigerated if it will not be used the same day that it is made.

Remind children to ask a teacher or classmate to turn the faucet on for them when they are finished painting and ready to wash hands.

## Bubble Wrap Painting (cont.)

### Including Every Explorer

Painting on textured materials like this bubble wrap can be a great way to include children with limited vision.

Some children may not feel comfortable with paint on their hands. Invite them to try painting with just one finger, with a wet wipe available if they want to clean their hands. Tools – such as shaving brushes – can also be used to interact with the paint.

### More to Do (optional)

- Take photos of children at work to display alongside their bubble prints.
- If children show a special interest in mixing colors, offer more opportunities to explore over the next few days. Try mixing red, yellow, and blue easel paint and/or playdough.
- During this experience and the **Making Bubble Solution** experience, children may have encountered the word *homemade*. During a mealtime or other informal conversation time, talk together about the meaning of the word homemade and think of things that can be either homemade or store-bought. Cakes, blankets, and soap are all examples. Do any children have family members who enjoy making things by baking, sewing, woodworking, or in other ways? This conversation could lead to your group's next big topic of interest!

This experience offers special opportunities to build and strengthen:

**Cognitive Development – CD 1.1**

**Scientific Thinking – ST 1.1, ST 2.1**

**Creativity and Aesthetics – CA 2.1**

## Big, Big Bubbles

Will a bigger bubble wand make bigger bubbles? This experience begins indoors but concludes outdoors.

### Materials

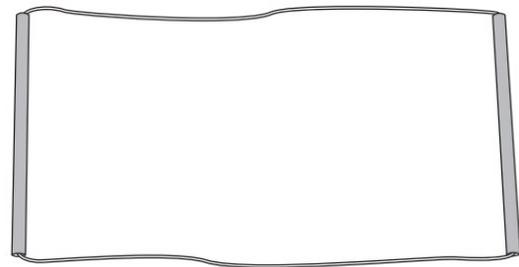
- Straight drinking straws, 2 per child
- At least two rolls of yarn or sturdy string
- Masking tape
- Bubble solution
- Large, shallow trays for bubble solution
- Scissors, 2 pairs
- Permanent marker, optional

Before you begin, cut at least two long pieces of yarn that each measure approximately 48 inches long. These will be used by children as they measure and cut their own pieces of yarn. Lay your long pieces of yarn out straight and tape them to a long table or the floor in your small group gathering area.

Encourage children to talk with you about what they have learned about bubble wands so far. Invite them to use strings and straws to create large, flexible bubble wands. Then, you can take them outdoors to try them out!

Show children how to roll out uncut yarn next to one of your long pieces. Children can work with partners to measure and cut yarn until each child has a piece that is about the same length as yours.

Next, children can work with partners to thread two straws on each piece of yarn. It will work well for one child to hold one end of the yarn while their partner threads the straws from the other end. Knot the yarn to make a closed loop. Pull the yarn through the straws until the knot is inside one of the straws.



Keep working until each child in the small group has his/her own yarn-and-straw loop.

When you take the bubble wands outdoors, explain to children that it may take a little practice to figure out the best technique for using them. They can observe and talk with each other to figure out what works best. Allow children to try using the bubble wands in their own ways; offer suggestions only if they seem truly stuck. (“What do you think might happen if you try...?”)

## **Big, Big Bubbles (cont.)**

Eventually, children will figure out that the wands work best in the following way.

1. Holding one straw in each hand, dip straws, yarn, and fingertips in the bubble solution.
2. Pause to let extra solution drip back into the container.
3. If it is a breezy day, turn so that the wind is blowing on your back. When you carefully open the bubble wand, the air blowing through the middle will create a long, tube-shaped bubble!

If it is a still day, try holding your arms out in front of you. Open the bubble wand as you pull your arms back to your body.

Some children may also experiment with walking backward with their wands. Help children notice and describe what works. Notice persistence and celebrate successes!

### **Including Every Explorer**

Waiting without activity is hard for all preschoolers. Keep the group size small so that children don't have long waiting times while making their wands.

Consider pairing older, more experienced children with younger and/or less experienced children for this learning experience. There are many opportunities for peer modeling and support.

### **Did You Know?**

This bubble wand is called the Zubrowski Wand. It's named after Bernie Zubrowski, the educator who invented it for The Children's Museum in Boston. Talk with children: If they invented a bubble wand, what would it be called? This is a great opportunity to talk about last names!

This experience offers special opportunities to build and strengthen:

**Social and Emotional Development – SE 1.2, SE 2.2**

**Cognitive Development – CD 1.1, CD 1.2, CD 2.2, CD 3.1**

**Physical Development and Health – PH 2.1**

**Mathematical Thinking - MT 3.1**

## Active, Physical Play – Bubbles

Invite children to join in activities such as these during outdoor play times. Some children will want to come and play, while others will prefer to continue with their own, free choice activities. Some activities found in this section may also be appropriate for indoor gross motor play or active group gatherings.

### Parachute Pop

Invite children to hold the edges of a parachute. If you do not have a parachute, you can use a flat bed sheet instead. Blow bubbles under the parachute as the children hold it high over their heads.

Count down to build playful anticipation: “3...2...1...Pop!” As the group calls out “pop!”, children quickly pull the parachute to the ground to pop the bubbles. Peek underneath to find out if you popped them all! Children may be excited to chase and pop any bubbles that escape from under the edge of the parachute.

Repeat several times. This quick game pairs well with other favorite parachute games.

### Bouncing Bubbles

Look in your wintertime supplies to gather clean, child-sized, knit gloves. Blow some bubbles and invite children to try to catch them with their hands. Bubbles will almost always pop when touched with our bare hands.

Next, invite children to put a glove on one hand. Encourage them to reach out gently to try to catch a bubble on their open palm. If they move carefully, they’ll find that they can roll or even bounce the bubbles on their gloved hand. Play classical music as children glide around the play area catching bubbles.

### Did You Know?

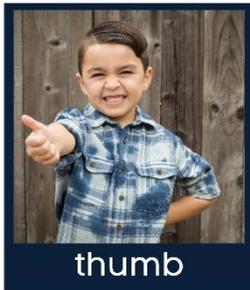
It’s the oil on our skin that causes bubbles to pop. Clean gloves provide an oil and dirt-free surface where bubbles can land.

## Active, Physical Play – Bubbles

### Bubble Popper's Challenge

After children have had time to chase and catch bubbles any way that they want, challenge them to try popping bubbles with various body parts.

Can you pop a bubble with your foot? How about your elbow? Your knee? What other ways can children think of to pop bubbles?



#### More to Do

Consider making picture and word cards to allow one child to be the caller for classmates. Cards like these promote literacy learning and can be repurposed in many different ways.

### Washing Wheeled Toys

In your outdoor play area, create an area where children can wash and dry tricycles, wagons, and other large wheeled toys. Fill buckets with water and mild, non-toxic soap. Gather a collection of large sponges, car wash mitts, and hand towels. If possible, provide a garden hose for rinsing.

#### More to Do

- Work with children to expand wheeled toy wash area to include signs, cones, and/or arrows to guide traffic, smocks and a cash register for workers, and a waiting area for customers.
- If your program has Summer water play days, consider looking online for plans for making a ride-through tricycle car wash with PVC pipe and a garden hose. This could be a fun family engagement project for a handy parent or grandparent! (Avoid or modify designs that have long streamers or strings. These aren't safe for group settings.)

## Growing Every Day Supporting Social and Emotional Development

Carol Evans, A-State Conscious Discipline Coach

*A group of preschoolers enjoys blowing bubbles during the last few minutes of outdoor play before lunch time. Suddenly, Omar trips and stumbles. His bottle of bubble solution tumbles from his hands. It rolls across the ground, spilling into a sudsy puddle in the grass. Omar buries his face in his arms and begins to wail.*

Spilled bubble solution may not seem like a crisis to an adult, but to Omar, it feels like a very big deal. He was having so much fun with his friends until, suddenly, the fun was over. Everything changed. Other children were looking at him, and it all felt like too much to handle.

Omar's teacher understands how hard unexpected setbacks can be for young children. Strong feelings can be even more overwhelming when children are hot, tired, hungry, or uncomfortable. The teacher sees the moment as it is: an accident. She takes a deep breath to ensure she is at her best as she moves to provide Omar with the support that he needs. She offers comfort with her calm tone, her measured breathing, and her open arms. "Omar, you tripped and your bubbles spilled. That's hard. You seem frustrated." Her words are few, but full of compassion.

Omar leans into her and nods. It's good to feel understood. When Omar is calm, the teacher helps him dust off and think about what he would like to do next. Omar agrees that he would like to help refill the bubble bottles before afternoon playtime.

Omar's teacher supported his social-emotional development when she:

- Stayed safe and calm.
- Understood his story or perspective.
- Helped him solve his problem once he was ready.



## Even More Bubbles Experiences

- Handwashing times are perfect times for talking and wondering about bubbles.
- If you have a special place in your classroom where children go to relax or calm down, try introducing bubble wands (without soap) as a tool for intentional breathing.
- Young children are often eager to help with cleaning tasks. Create a table-washing or window-washing basket that includes washcloths and a spray bottle with a few drops of liquid dish soap in water. Provide closer supervision as children learn to use the soapy spray safely.
- Are some days better for blowing bubbles than other days? During outdoor playtimes, notice how sunlight, wind, and moisture affect bubbles. Children may begin to recognize ideal bubble-blowing conditions.
- Have you ever noticed the bubbles in a slice of bread? Invite a family member to bake bread with interested children. Perhaps baking will capture children's interest and lead to a whole new topic of exploration!

## Notes:

## Concluding Your Bubble Exploration

1. With your teaching team, think about, and discuss the following questions.

What experiences have our children had with bubbles during this exploration? What new knowledge and skills have developed?

Do the children seem ready to conclude this exploration? Have their questions been answered? Is their interest waning? If children are still excited about this topic, think about ways to continue and extend the exploration.

How can we document children's learning and help children share what they have learned with others?

Your bubble exploration might end with one of these activities.

- Creating a book of photos or children's drawings. The book can be added to the classroom library and/or copies can be made for each family.
- Hosting a family engagement event. For example, the bubble exploration might conclude with an outdoor Bubble Extravaganza where children have an opportunity to demonstrate a variety of homemade bubble makers to their families.
- Engaging children in a service activity related to their interest. In this case, children could make jugs of bubble solution to deliver to other classes in their program. Children could also help craft a list of "Bubble Blowing Tips" to share with others.

2. Talk with children about their favorite memories about bubbles. Model gratitude by creating thank you cards or letters to the families, school members, and community members who supported your bubble exploration.
3. Where will you go next? Use your observations and conversations with children to help you plan your next exploration!

# Using Explorers Preschool Curriculum

*Explorers Preschool Curriculum (EPC)* is designed for early childhood educators and preschool-aged children. It can be used in any setting, including private preschool programs, public school programs, and family child care homes.

## EPC Guiding Principles

**1. Children are naturally curious and eager to understand their world.**

The *Explorers* curriculum promotes authentic, enjoyable, first-hand experiences in a vibrant and encouraging environment.

**2. Domains of child development are interrelated and are all important.**

Physical, cognitive, communicative, social, and emotional development are all vital for success in school and life. *Explorers* supports the *Arkansas Child Development and Early Learning Standards (CDELS)* with engaging experiences that promote learning across all domains.

**3. Children are trustworthy partners in learning.**

*Explorers* is inquiry-driven, guided by children's interests, questions, and ideas. Children take on meaningful decision-making roles and responsibilities as a part of each investigation. The child's right to play is protected and supported as fundamental component of every day.

**4. Each child, and each group of children, are unique.**

*Explorers* offers choices and flexibility for children and adults. Individualization to include children with developmental differences and special needs is integral to the curriculum.

**5. Learning happens best within the context of family, community, and the natural world.**

*Explorers* strives to promote positive connection between preschool-aged children and their school, community, and environment. Diverse and meaningful opportunities for family engagement are given special importance.

For professional development support with Explorers Preschool Curriculum, please contact Marcy White, [MWhite@AState.edu](mailto:MWhite@AState.edu)

## Big Ideas from EPC

*Explorers* may be different from other curricula you've used in several ways. Understanding these differences will help you use the curriculum successfully.

*Explorers* includes a collection of topics for investigation. These topics include, but are not limited to:

- Bubbles
- Day and Night
- Farmers' Market
- Insects
- Making Music
- Ramps and Tunnels
- Songbirds and Squirrels
- Trees

Each topic supports children's real-life, firsthand experiences.

**Topics of learning – known as investigations – do not have to occur in a predetermined order.** Instead, educators are urged to observe, talk with, and think about children in their group. Which of the topics would be most interesting and engaging to this group of children? Decisions may also be guided by the resources that are accessible to the program. Programs may choose to participate in any of the investigations, in any order.

**Within broad topics, individual groups are urged to “zoom in” and focus most intently on areas of special interest.** For example, one group taking part in a *day and night* investigation might be most interested in city lights that shine though the dark. A second group might be more interested in nighttime creatures like crickets and moths. Although both groups have the same, broad focus, conversations and planned activities in the two rooms may differ greatly. Some activities in the topic packet may be skipped, and different high-value activities may be offered to support children's interests.

**Educators are expected to “re-run” books and activities that especially interest children.** That means that the same activity will be shared again over the course of several days or weeks. Through repeated opportunities to explore, children gain expertise, test new ideas, and work in increasingly complex ways. Repetition helps children build confidence and construct knowledge.

**Investigations are not limited to one week.** In fact, groups may focus on the same topic for two, three, or four weeks – or more! It is believed that deep, comprehensive investigation of any interesting topic is more beneficial to young thinkers and learners than a “sprinkling” of many different topics. Thus, children and adults are invited to continue their investigation as long as it sustains children's interest. An investigation concludes when educators observe that children's questions have been answered. Children seem satisfied and ready to move on to other topics of interest.

## EPC Daily Practices

A resource packet is available to support each investigation topic. These packets support learning throughout the day in these eight ways:

### 1. Learning Center Extensions

Free play is a crucial part of every day! Learning Center Extensions are play objects and other materials that support the topic. These can be added to the indoor play areas that children use every day. The items in this section are examples. Educators may implement their own ideas, as well.

### 2. Books for Sharing with Groups

Suggestions for books are listed in each packet. It is not expected that programs will purchase the entire book list. Rather, the list may provide guidance and inspiration as educators select books from their storage area and/or their local children's library.

These may be added to classroom book areas and can be shared informally with one or a few children at a time during play times. Some of the books on the list are also designated as **\* recommended read-alouds** for sharing with larger groups of children.

### 3. Topical Conversations

Conversations can occur within the context of play or daily routines. Especially with older preschoolers, some conversations may also occur during whole group meeting times. In addition to informal conversations throughout the day, *Explorers* encourages educators to routinely use two additional strategies each week:

#### Response Charts

The educator talks individually with each child and writes down exactly what they say. This interview process takes place during play time or other informal times. Once all of the children have had a chance to respond, the chart is posted where everyone can easily see it. The educator reads all of the responses aloud during a group meeting. Written response charts are recommended at least once a week.

#### Polls

Children and adults respond to a question by writing their name under one of two choices on a chart. Younger or less experienced groups may opt to place name cards on the chart instead. The polling process takes place with one, or a few, children at a time – perhaps as part of the morning arrival routine or as children finish breakfast.

During a group meeting, children and adults look together at the chart. It is recommended that children are invited to complete polls 1-3 times per week.

## **4. Playful Songs, Rhymes, and Games**

These simple activities may be incorporated into group gathering times or used as transition activities. Many are “piggyback songs” – meaning that they offer new words to tunes that children may already know.

## **5. Active, Physical Play**

Most of these activities are intended for the outdoor play area. Some are also suited for indoor gross motor spaces – such as gyms – or active group gatherings.

Educators are encouraged to invite children to join in activities such as these daily. Many children will want to participate, while others would rather continue with their own, free choice gross motor play. When two or more adults are present, one can lead the activity while others supervise children elsewhere in the play area.

## **6. Growing Every Day**

These vignettes highlight strong, positive guidance practices. Educators are reminded that the most valuable learning occurs when adults model, coach, guide, and encourage children in the context of everyday interactions.

## **7. Small Group Learning Experiences**

Ideas for small group learning experiences make up the bulk of each resource packet. These learning experiences are intended to be carried out with groups of 3 – 5 children at a time.

This means that educators will complete each activity with several small groups. For some activities, some children may participate in the morning and some may participate in the afternoon. A few activities may even take place over the course of several days. Using lists or sign-up sheets can reassure children that everyone will have a turn.

**You'll find a key to small group learning experiences on the following page.**

## **8. Concluding Your Exploration**

This final section of each resource packet invites educators to reflect about whether children are ready to wrap up and move on to another topic of investigation. It includes ideas for culminating events and documentation.

# Key to Small Group Learning Experiences

Each double-sided small group learning experiences idea sheet has specific components to assist you with planning and facilitation:

<p><b>Exploring with Flashlights</b> Let's investigate flashlights and go on a low light adventure!</p> <p><b>Materials</b></p> <ul style="list-style-type: none"><li>□ Basket of assorted flashlights (at least one or two more flashlights than children in the small group)</li></ul> <p>Talk with children about what they know about flashlights. Flashlights are lights that we can carry in our hand. They are usually powered by batteries, and they are tools that let us see in dark places. What experiences have children had with flashlights? They might talk about using flashlights when camping or when the lights go out during a thunderstorm.</p> <p>Invite children to investigate the flashlights in the basket. Notice together.</p> <ul style="list-style-type: none"><li>• How flashlights switch on and off.</li><li>• Which ones are brightest, and which are dim.</li><li>• Which ones have a narrow beam, and which ones have a wide beam.</li><li>• Other differences and similarities related to size, shape, color, and function.</li></ul> <p>This may be a good time to support children as they learn to ask for turns and trade materials – "May I use the tiny flashlight next?", and, "I'll trade you the blue flashlight for the green one."</p> <p>After a period of open-ended exploration, invite each child to choose a flashlight to take on a walk. You'll go together to another area where the lights are dim, but not totally dark. This could be another room, a hallway, a gymnasium, or any other child-safe space where you can turn out the lights. Invite children to investigate by walking around and shining their lights on things that interest them.</p> <p>When you return to the classroom, talk with children about what they noticed while exploring with flashlights.</p> <p><b>Helpful Hints</b> Ask colleagues for help building a collection of flashlights. Families may be happy to help, too.</p>	<p><b>Title</b></p> <p><b>Materials: Things to gather and prepare</b></p> <p><b>Procedure: How to facilitate the activity with children</b></p> <p><b>Helpful Hints: Tips for a smooth, successful experience.</b></p>
<p><b>front of page</b></p> <p><b>Including Every Explorer: Ways to individualize and adapt for children with special needs.</b></p> <p><b>More to Do: Suggestions for extending learning, creating displays, and engaging families.</b></p> <p><b>Did You Know?: Fun facts and/or background information for teachers.</b></p> <p><b>Build and Strengthen: Connection to AR Early Learning Standards (CDELS)</b></p>	<p><b>back of page</b></p> <p><b>Exploring with Flashlights, cont.</b></p> <p><b>Including Every Explorer</b> Some children are frightened by dark places. If a child seems worried, invite them to hold your hand or walk next to you.</p> <p>Some children may require one-on-one support to have a safe, satisfying experience outside their familiar classroom. If this is not possible, find a way to explore inside the classroom.</p> <p><b>More to Do (optional)</b></p> <ul style="list-style-type: none"><li>• Hang pictures of nighttime (nocturnal) creatures in the place where children will explore. Have fun spotting owls, bats, opossums, and more!</li><li>• Create a flashlight exploration space in your classroom with the basket of flashlights and a large, open appliance box that children can crawl inside.</li><li>• To challenge older or more experienced preschoolers, place one flashlight without batteries in the basket with the working flashlights. When children discover the non-working light, encourage them to investigate. Offer two different sizes of batteries when they realize that batteries are needed. They'll figure out which size is correct and install them in the flashlight. "I fixed it!"</li></ul> <p><b>Did You Know?</b> This exploration may seem simple to adults, but we have far more experience with flashlights and dim places than children do! Children may investigate many different things, such as:</p> <ul style="list-style-type: none"><li>• How a flashlight beam moves when they move their arm.</li><li>• What happens when light shines on a window or mirror.</li><li>• How a beam of light changes as it moves closer to a surface that it is shining on.</li></ul> <p>This experience offers special opportunities to build and strengthen:</p> <ul style="list-style-type: none"><li>• Social and Emotional Development – SE 1.2, SE 2.1, SE 2.2</li><li>• Cognitive Development – CD 1.1, CD 2.1</li><li>• Science and Technology – ST 1.1, ST 3.2</li></ul>