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Join three friends for some bubble blowing fun as they make bubbles using circular, triangular, and heart-shaped wands.

Ages: Infant to 5 years

ATOS Reading Level: N/A

Lexile: AD280L

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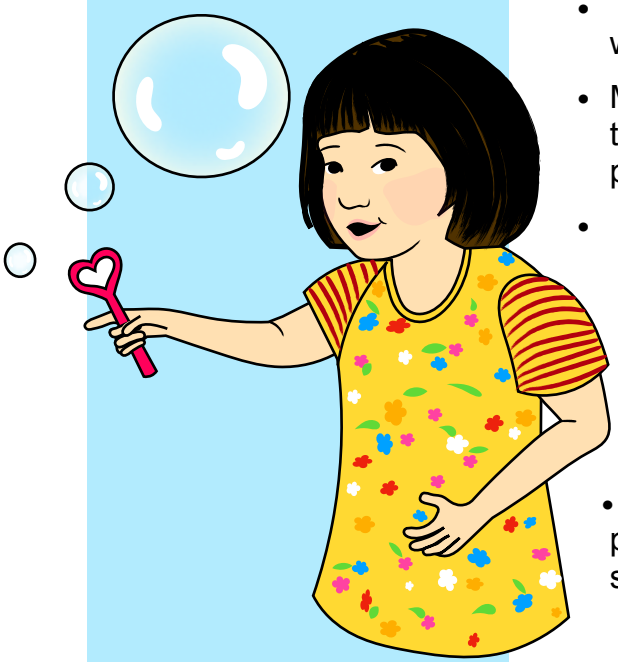


Circle! Sphere!

Can you blow a heart-shaped bubble with a heart-shaped wand?

Topics: shapes, patterns, cause and effect, spatial awareness, science

Activities To Do Together:

Use the book *Circle! Sphere!* to explore the shapes of everyday objects.

While reading the book *Circle! Sphere!* try the following:

- Notice the different shapes of the wands and the shape of the bubble each wand makes. What do you notice?
- Count what you see in the story. Wands, bubbles, children.
- Compare the size of the bubbles on the book cover or last page of the story.
- Talk about how spheres and circles are different.

When you have finished reading the story try the following:

- Blow bubbles for your child to look at and reach. This is great practice for tracking moving objects and also supports eye-hand coordination.
- Look for circles and spheres around you. Marbles, oranges, and tennis balls are examples of spheres that may be familiar to your child.
- Blow bubbles and describe where they are with positional words like “up,” “down,” “under,” and “over.”
- Make bubble wands of different shapes with wire. Use them to blow bubbles. See if you can make a wand that produces a bubble that isn’t a sphere
- Blow bubbles and play “Simon Says” with both a bubble popping and positional word twist. Ask your child to pop a bubble only when they hear a direction preceded by the words “Simon says.” For example, your child would pop a bubble when they hear “Simon says pop a bubble **near** your face,” but do nothing when they hear the direction “Pop a bubble **beside** your shoe.”
- Explore how spheres (balls) and cubes/rectangular prisms (boxes) move. Try stacking and rolling these shapes. What differences do you notice?

Mathematical Conversations During Daily Routines for Infants & Toddlers:

1. Tummy time - Blow some bubbles for baby to enjoy during tummy time. Say, “I’m going to touch the bubbles. Can you touch them too?” Talk about what happens when you touch the bubbles. Talk about their shapes and sizes. Count them too.
2. Play time - Blow bubbles with your toddler. Talk about the position of the bubbles. “The bubbles are moving **up.** That bubble is moving **toward** you. The large bubble is floating **down** to the ground.”
3. Bath time - Blow some bubbles for your toddler at bath time. Count them - “one bubble, two bubbles, lots of bubbles in the bath tub.”
4. Traveling time - Talk about the shape of bubbles. What can you find that’s the same shape as a bubble? Have a sphere scavenge hunt.

Questions for Mathematical Thinking:

1. What objects have a shape like a bubble?
2. What words could you use to describe a bubble?
3. What was different about the wands that Olivia, Mei, and Manny used to blow their bubbles? How were the wands alike?
4. Do you think it’s possible to make a bubble that isn’t the shape of a sphere? Why or why not?
5. What do you think would happen if you blew lots of bubbles into a container? What do you think the bubbles would do?

Early Math Project Resources:

Bubble Solution Recipe

Bubble Frames

Find That Shape

Shapes on the Wall

Bubble Snakes

** Spanish Versions will be uploaded shortly**

Follow this link for additional online resources

Vocabulary for Building Math Concepts: all, ball, big, circle, different, each, heart, little, shapes, sphere, triangle

Spanish Title: *Circulo! Esfera!*

ISBN: 9781623542245

Related Books: *Have You Seen My Monster* by Steve Light; *Captain Invincible and the Space Shapes* by Stuart J. Murphy

This link to the World Catalog will help you find Ship Shapes in the public library.

Math Connections:

Bubbles are fun for people of all ages and naturally lead to explorations of shapes, patterns, cause and effect, spatial awareness, and science.

Babies often like to reach for bubbles which supports their eye-hand coordination, provides practice tracking moving objects with their eyes, and reinforces the concepts of patterns and cause and effect relationships. Bubble solution can be made using no-tear baby shampoo to protect baby's eyes.

Toddlers enjoy chasing bubbles. This is a fun way for children to learn positional words - like "up," "down," "under," and "over." Turn this into a game - "Jump and pop the bubble **above** your head." "Stomp on the bubble **next to** your foot." etc.

Bubbles can be used to talk about shapes with toddlers and preschoolers during play time. A bubble is a sphere. A round ball is a sphere too. Will a ball roll? A block can be a cube or rectangular prism, etc. Will a block roll?

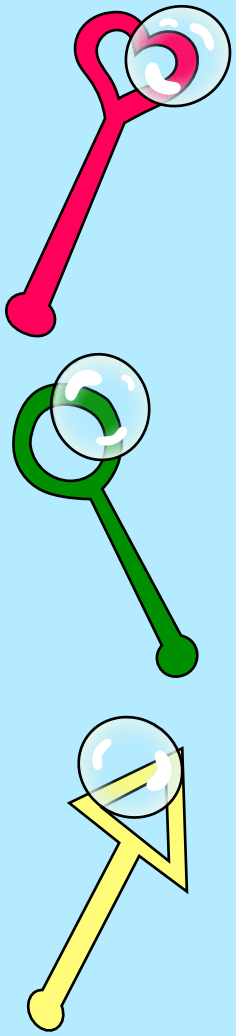
Ask older children to predict how bubbles react on a hot day and how they react on a cold day. Invite them to make a hypothesis and test what conditions are actually best for bubble blowing. What other conditions might affect bubbles? Have your child make different bubble solutions and test which will produce the largest and longest lasting bubbles. Encourage your child to figure out how they can blow a bubble around themselves or create a bubble the size of a bike.

People are often amazed by the structure of a bubble that results from dipping an open-sided cube, pyramid, or rectangular prism into bubble solution. How are these different from the bubbles blown with a wand? Why do they look so different? Building bubble blowing devices and designing a variety of polyhedra frames to dunk into bubble solution are imaginative challenges.

Learn about the science behind bubbles. Investigations might include finding out what actually happens when you blow a bubble, learning about elasticity and surface tension, and exploring why bubbles pop and how you can handle them so they're less likely to pop. Research where bubbles are found in nature and about their uses and purposes. People aren't the only living creatures that blow bubbles. Find out how whales and dolphins use bubbles!

Vocabulary for Extending Math Concepts: clear, cube, down, elasticity, flat, float, high, left, low, polyhedra, rectangular prism, right, round, sink, surface tension, three-dimensional, two-dimensional, up

Vocabulary for Reading Comprehension: share, soapy, wand



Age Level	Related Infant Toddler Foundations, Preschool Foundations and CA State Standards
Infant/ Toddler	**Cause and Effect** The developing understanding that one event brings about another **Spatial Relationships** The developing understanding of how things move and fit in space **Problem Solving** The developing ability to engage in a purposeful effort to reach a goal or figure out how something works **Imitation** The developing ability to mirror, repeat, and practice the actions of others, either immediately or later **Classification** The developing ability to group, sort, categorize, connect, and have expectations of objects and people according to their attributes **Attention Maintenance** The developing ability to attend to people and things while interacting with others and exploring the environment and play materials
Preschool/ TK	**Algebra and Functions 1.0** Children begin to sort and classify objects in their everyday environment **Geometry 1.0** Children begin to identify and use common shapes in their everyday environment **Geometry 2.0** Children begin to understand positions in space
Kindergarten	**Measurement and Data K.MD 1** Describe and compare measurable attributes **Geometry K.G 1,2,3** Identify and describe shapes