

Introducing the child to the concept of relative quantity

1-3

# Bubble Recipes

In *Bubble Recipes*, the Bubble-a-Tron can be used to create special bubbles by following a simple “recipe.” Following auditory cues the child must measure the bubble solution very carefully into beakers over the Bubble-a-Tron. Doing so will result in fun and silly bubbles!



Cosmo wants to use the Bubble-a-Tron to make some really cool bubbles and enlists the child to help with the bubble recipes.

## Major Objectives:

Understand words related to amount (more/less, same)

Understand relative quantity

## Overview

The best way to illustrate the concept of relative quantity is through hands-on activities or simulations of these activities. For young children, mixing up two or more ingredients to make a product (whether it’s cookies or play dough) is akin to making magic! Even something as simple as mixing paints to create new colors can be a thrilling experience. In this activity, we use the magic of the Bubble-a-Tron to introduce the concept of relative quantity.

As with “big” and “small,” the concepts of “more,” “less” and “same” are not that difficult for children to grasp when presented with concrete, real-world examples. Children are quick to point out when a friend has more of something (e.g., ice cream, play dough, toys). But when it comes to a cooking activity or science experiment that requires careful measurement, it is more difficult for the child to grasp these subtle differences. In *Bubble Recipes*, the Bubble-a-Tron can be used to create special bubbles by following a simple “recipe.” Following auditory cues, the child must measure the bubble solution very carefully into beakers over the Bubble-a-Tron. Doing so will result in fun and silly bubbles!

## Suggested Reading



*More, Fewer, Less* (Hoban)  
*The Doorbell Rang* (Hutchins)  
*Olivia’s Opposites* (Falconer)

## Suggested Activities

### Pre-Activity

- Use things in the environment to compare relative quality (e.g., a child with short hair and a therapist/parent/sibling with long hair). Ask the child to point to the one that is less/more/same.
- Show child pictures illustrating various quantities (e.g., a bald man and a woman with long hair). Ask the child to point to the one that is less/more/same.

### Post-Activity

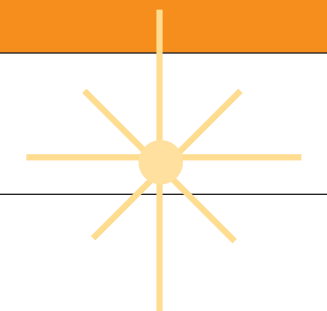
- Do a water play activity using water in clear plastic cups. Use a measuring cup to illustrate how much water is being used. For added fun, use food coloring to reinforce colors.
- Make silly putty (equal parts of white glue and non-toxic liquid starch) or another fun at-school recipe. Talk about measuring the ingredients.
- What happens if you add too much (or too little) of one ingredient?
- Using the whiteboard side of the Magnetboard, draw two rocket ships and ask the child to use the magnetic squares to fill up the gas tank. Have him practice matching his rocket ship to your rocket ship.

### At-Home Suggestions

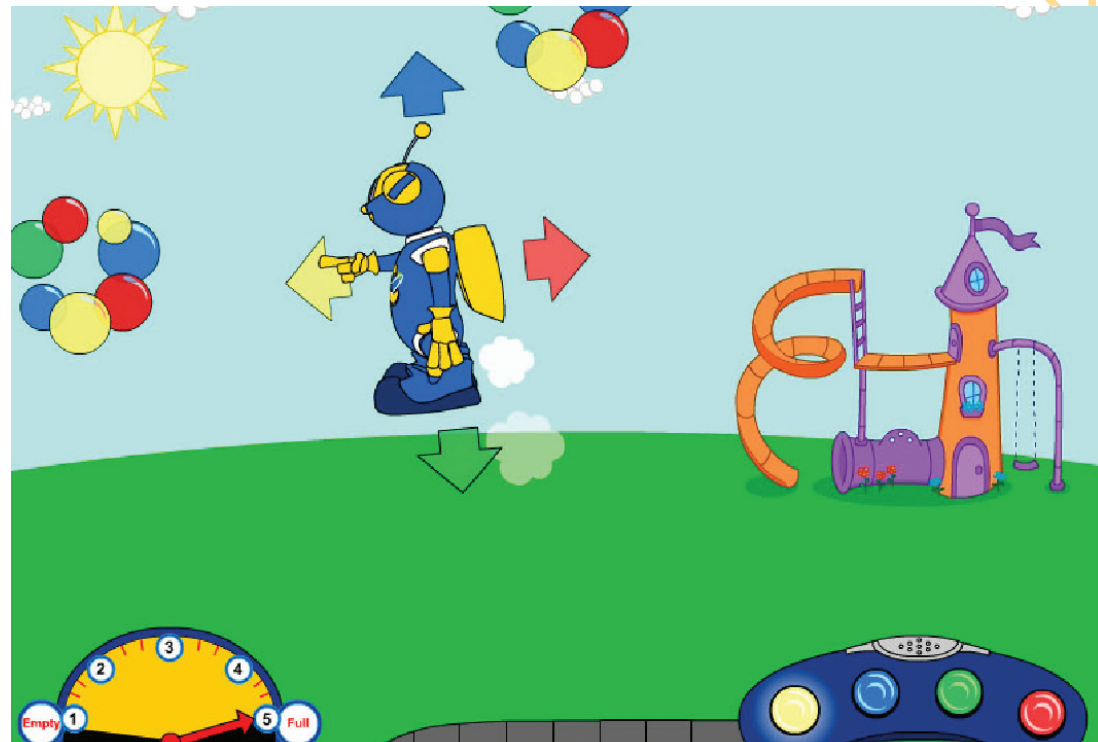
- Cross-Curricular Activity:** Sharing is a good topic for discussion in relation to relative quantity. It is an integral part of the social curriculum for preschool-aged children, and fits well into discussions of more, less, and same.
- When baking with your children, have them explore filling up measuring cups with different ingredients. Ask which cup has more or less. Fill a measuring cup up to “one cup” and ask your child to fill up another one the same.
- Show your child two cups/glasses of distinctly different sizes. Ask the child, “Which cup do you think holds more water?” Fill each cup and then empty them out into two same-sized measuring cups (or glasses), to demonstrate which has more and which has less liquid. You can add two different food colors coloring to the water to make the difference even clearer.
- Adaptation: Using an adapted measuring cup, allow the children with poor fine-motor skills to help pour the ingredients into the bowl.
- Fill everyone’s glasses to the same amount at mealtime. Throughout the meal, discuss the different quantities in everyone’s glasses (“Daddy has drank a lot of his milk. There is less milk in his glass than in my glass”).
- Make lemonade! This recipe is easy and fun (1 lemon, 8 oz. water and 2 tbs sugar) Whats more, it will help to reinforce the concept of more and less (if it’s too sour, add more sugar; too sweet, add more lemon).
- Make Jell-O Pudding, or Kool-Aid.

### Worksheets (See Appendix A)

**Worksheet V – Fill Cosmo’s Spaceship**



# Popping Bubbles



In this activity, the child helps Cosmo travel around the screen towards the bubbles. Once Cosmo gets to the bubbles, they pop!

**Popping bubbles is a tactile, fun way to get kids moving and interacting with their environment. In this module, we also use popping bubbles to introduce children to the four key elements of direction: up, down, left and right.**

## Overview

In the Popping Bubbles activity, we use consistent elements on the screen to help the child differentiate left from right: the sun is always on the left side of the screen, and the jungle gym is always on the right side of the screen.

**Tip:** Mission Control is not inherently designed as a navigational device. Therefore, it might be difficult for the child to transfer directional knowledge to the computer. To be most successful with this activity, review the concepts of "up," "down," and "left" and "right" with the child immediately preceding this activity. It might also be helpful to directly transfer these concepts to elements on the computer screen, and in the room as the child sits at the computer ("Look, the door is to the left.").

## Suggested Reading



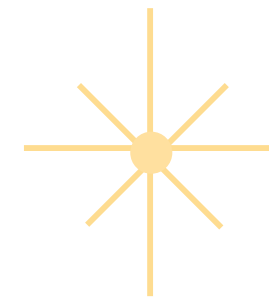
*Which Way, Ben Bunny* (Smith)  
*The Foot Book: Dr. Seuss's Wacky Book of Opposites* (Seuss)

## Major Objectives:

Follow directions to achieve specified objective

Understand directional words (up, down, left, right)

Respond to cues in a timely manner



## Suggested Activities

### Pre-Activity

- The best way to solidify the abstract concept of directional awareness is to build upon the child's prior concrete knowledge. Daily activities like putting on shoes or coloring help to reinforce these concepts. While the child is coloring, tell him, "I see you are using your right/left hand to hold your crayon/marker/pencil."
- Reinforce the concept of left and right while sitting with your child at the computer (e.g., I am sitting on your left).
- Stick stickers on (or stamp) one or both of the child's hands and let him know that, for example, "The ladybug is on your left hand."

### Post-Activity

The hokey-pokey ("Put your LEFT foot in...") is a fun game that children can play while solidifying their directional competency.

**Adaptation:** This is easy to adapt for children with motor challenges. Just change the words a bit to meet all of your children's needs (e.g., "Move your left foot up. Move your left foot down").

- Try playing "Simon says" modeling and reinforcing directional words (i.e. "Put your hands UP in the air," "Jump to the RIGHT.") Take turns being "Simon" so that the child has a chance to practice using directional words.
- Writing letters and words is a great way to reinforce the concepts of "up," "down," "left" and "right." Have the child practice writing

uppercase letters using a printout showing directional arrows. ("To make the letter "I" you start at the top and move "down.") If the child is learning to write his name, let him know that he starts on the left and finishes on the right.

**Note:** Directionality in conventional writing develops over time. Children learning to write their names will sometimes write in mirror image or fragments e.g., ("MA" for "Mary"). It is important to validate this "invented" spelling as it is a normal part of writing development. For younger children: when drawing pictures of houses and family, point out familiar elements that relate to directional awareness (e.g., the sky is up and the ground is down).

- Shell game: Place two paper cups upside down put L and R on the bottom of each cup. Ask the child to find the object under the left or right cup.

### At-Home Suggestions

- While getting dressed, reinforce the concepts of directional awareness by using the words "up," and "down," "left" and "right" ("Put your hands up!" "Now let's pull your shirt down.").
- Asking the child to help set the table is a great way to reinforce directional awareness. First, model a place setting for your child while describing each item's location ("Let's put the fork on the left, and the knife on the right"). Then, ask the child to set the next place. Finally, ask the child to tell you which items are where ("What is that on the left?") or ask the child to identify the location of an item (feel free to give the child verbal cues, e.g., "Where is the fork, on the left or the right?").
- A more advanced home activity is to use arrows to make a map from the front door or the kitchen to the child's bedroom. You can make a simple floor plan and then ask your child to draw the arrows saying whether there is a left or right turn.

### Worksheets (See Appendix A)

**Worksheet VI** – Tracing Shapes • **Worksheet VII** – Writing Letters • **Worksheet VIII** – Cosmo's Maze