

# Kitchen Science

## MESS® Recommended Materials



### Kitchen equipment

- sink
- freezer
- oven
- measuring cups
- measuring spoons
- mixing bowls
- mixing spoons
- loaf pan
- grater
- popsicle molds
- ice cube trays
- hot air popcorn popper
- small serving dishes or cups
- spoons for eating
- dish towel
- oven mitts

### Additional equipment

- water table or bins
- plastic test tubes with covers

### Kitchen Science

- variety of clear plastic containers of different shapes
- objects as examples of solids (e.g., block, ball, beads)
- funnels
- bubble wands of various shapes and sizes
- shallow trays to hold bubble solution
- assortment of clay tools such as rollers, stampers, and cutters
- paintbrushes
- color glasses

#### Supplies

- water
- vinegar
- fruit juice
- oil
- food coloring
- other liquids to mix with water such as liquid soap, paint
- sugar
- salt
- cornstarch
- other solids to mix with water: sand, coffee, glitter
- ingredients for bubble solution (liquid dish soap, distilled water, corn syrup or glycerin and/or commercial bubble solution)
- dish detergent
- other liquids to use for bubble exploration such as milk, soda
- ingredients for play dough (flour, salt, warm water, oil, and food coloring) and/ or commercial play dough or clay
- baking soda
- flour
- yeast
- nonfat dry milk
- heavy cream
- half & half or whole milk
- vanilla extract
- rock salt
- ice cubes
- popcorn
- bar of hand soap
- toilet paper
- clear plastic cups

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- heavy duty quart- and gallon-size sealable bags
- small plastic containers with lids
- paper towels
- paper

#### Books

Bradley, Kimberly Brubaker. *Pop! A Book about Bubbles*. New York: HarperTrophy, 2001. Simple text and beautiful close-up photographs introduce both the how-to and the excitement of making bubbles. A recipe is included. The only bad news is that bubbles always pop!

Carle, Eric. *Pancakes, Pancakes*. Saxonville, MA: Picture Book Studio, 1995. Young Jack wants pancakes for breakfast, but first has to grind the wheat, collect an egg, milk a cow, churn the butter, and so on. Vibrant collages showing Jack hard at work invite conversation about where food comes from. A recipe is included.

Carle, Eric. *Walter the Baker*. New York: Simon and Schuster, 1995. After serving the Duke a bad-tasting bun, Walter is commanded to invent a good-tasting roll that the “sun can shine through three times.” After a frustrating night with no success, Walter accidentally invents the pretzel!

Christian, Eleanor, and Lyzz Roth-Singer. *Let’s Make Butter*. Mankato, MN: Yellow Umbrella Books, 2001. This small-format book begins with the concept of change, then photographs and simple sentences detail the process of making butter. A step-by-step review page and glossary/index are included.

De Paola, Tomie. *Pancakes for Breakfast*. New York: Harcourt Brace Jovanovich, 1978. A lady begins the snowy day thinking of a stack of fluffy pancakes! This (mostly) wordless picture book follows her trials as she gathers ingredients around her farm. Doomed to failure by her dog and cat, she ultimately finds the pancakes she so desires—next door. The delightful illustrations include a reference to a recipe, and “thought bubbles” that promote conversation.

De Paola, Tomie. *The Popcorn Book*. New York: Holiday House, 1978. Two boys, encouraged by a TV ad, decide to make popcorn. Wondering aloud why popcorn kernels are kept in the refrigerator, they find a book that discusses popcorn’s worldwide history, statistics, and why popcorn pops. Cartoon illustrations add to the plot. The more sophisticated concepts can be edited when reading with young children.

### Kitchen Science

Edwards, Pamela Duncan. *Warthogs in the Kitchen: A Sloppy Counting Book*. New York: Hyperion Books for Children, 1998. Warthogs in the kitchen? It's a strange concept, but weaves in counting 0-10, measuring, cleanliness, various liquid/solid ingredients, effects of heat, and a recipe. And what rhyming fun they have making cupcakes!

Edwards, Pamela Duncan. *Warthogs Paint: A Messy Color Book*. New York: Hyperion Books for Children, 2001. Gloomy, rainy days call for indoor activities, so the warthogs decide to paint their kitchen. While they lack a specific plan, colors give them rhyming ideas as they discover what happens when primary colors are mixed.

Holub, Joan. *The Pizza that We Made*. New York: Viking Books, 2001. Easy-to-read rhyming text describes the steps in making a pizza, including measuring ingredients, mixing, and folding the dough. Bright illustrations show three active, young children and an adult helper. A recipe is included.

Knight, Bertram. *From Cow to Ice Cream: A Photo Essay*. New York: Children's Press, 1997. Can you imagine a world without ice cream? But where does ice cream come from? Colorful close-up photography and simple text show the process of turning raw milk into tasty frozen treats of many flavors and shapes.

Kuhn, Dwight, and Melvin Berger. *Bubbles, Bubbles Everywhere*. New York: Newbridge Educational Publishing, 1994. In big book format, simple rhyming text accompanies large close-up photographs of different kinds of bubbles. The excitement of all the places you can find/make bubbles is conveyed with enthusiasm.

Lehn, Barbara. *What Is a Scientist?* Brookfield, CT: Millbrook Press, 1998. "A scientist is a person who . . ." Simple text, that can be read on multiple levels, and color photographs of children describe the work that scientists do: questioning, observing, experimenting, drawing, etc. Most are applicable in Kitchen Science activities.

Levenson, George. *Bread Comes to Life: A Garden of Wheat and a Loaf to Eat*. Berkeley, CA: Tricycle Press, 2004. After several pages of yummy-looking examples, beautiful color photographs depict the steps in making bread, starting with seeds in the garden. Close-up photos with good descriptive words show measuring tools, ingredients, and dough. Several projects, including a recipe with directions for "any 4-year-old, with an adult helper," are included.

Lionni, Leo. *Little Blue and Little Yellow*. New York: HarperCollins, 1959. When best friends little blue and little yellow hug, they turn green. Once their parents figure out what is happening, all is right with the world again. Because all the characters are pictured as abstract splotches, the reader's eyes remain focused on the colors.

## **Kitchen Science**

Mason, Adrienne. *Change It! Solids, Liquids, Gases and You*. Tonawanda, NY: Kids Can Press, 2006. “Matter is all around you.” Limited text, colorful cartoon illustrations, and several step-by-step activities explain the solid, liquid, and gaseous states of matter.

Millen, C.M. *Blue Bowl Down: An Appalachian Rhyme*. Cambridge, MA: Candlewick Press, 2004. Almost a lullaby and certainly poetic, the tradition and process of making bread is beautifully illustrated. An Appalachian mother and toddler start the process together by getting down the blue bowl.

Mitgutsch, Ali. *From Milk to Ice Cream*. Minneapolis, MN: Carolrhoda Books, 1979. This small-format book with simple text and illustrations (that begin with a cow, of course) appeals to young children who want to know how things work.

Moran, Alex. *Popcorn*. New York: Green Light Readers/Harcourt, 2003. A bouncy, rhyming text and busy illustrations in vibrant colors promote the active experience of popping corn. Excessive measurements almost cause a disaster, but all ends well. An activity for the leftover popcorn is included.

Nelson, Robin. *Gases*. Minneapolis, MN: Lerner Publications, 2005. Photographs of familiar examples and simple text explain a hard-to-understand concept. “Great Gas Facts,” a glossary, index, and page about air pollution are included at the end of this small-format book.

Peters, Lisa Westberg. *Purple Delicious Blackberry Jam*. New York: Arcade Publishing, 1992. While visiting Grandma, Freddy and Muff ask to make blackberry jam, an activity that begins with a berry-picking adventure and includes a recipe. Things do not quite turn out as planned, but the process is great fun. Wispy, active, messy illustrations fit the descriptive text.

Royston, Angela. *Solids, Liquids, and Gases*. Chicago: Heinemann Library, 2002. This introductory book gives examples of liquids, solids, and gases that will be familiar to young children. Ways to tell the difference between the three states are included. The hard-to-understand issues of “tiny” solid pieces (e.g., flour, baby powder), mixing different states, melting and freezing, and steam also are covered.

Sturges, Philemon. *The Little Red Hen (Makes a Pizza)*. New York: Dutton Children’s Books, 1999. This contemporary adaptation of the classic tale of *The Little Red Hen* focuses on the ingredients and steps involved in making a pizza. Delightful cut-paper illustrations show reluctant friends—until eating time. These friends at least help with the clean-up.

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Trumbauer, Lisa. *Why We Measure*. Mankato, MN: Yellow Umbrella Books, 2003. Tools to measure height, length, distance, speed, weight, quantity, and size are all included in simple text and detailed photographs. This small-format book provides a good introduction to the concept of measurement, although not all of the tools shown are used in the Kitchen Science unit.

Urbanovic, Jackie. *Duck Soup*. New York: HarperCollins, 2008. Active, detailed illustrations tell a dramatic story of Max, the duck who works to create his own unique soup recipe. Max measures oil, he smells and tastes his creation, and steam rises from the hot soup pot, but still something is missing. While he is out in the garden looking for the missing flavor, friends erroneously bring the creation to a safe but disastrous conclusion. Poor Max will have to start all over again, but at least he isn't duck soup!

Walsh, Ellen Stoll. *Mouse Paint/Pinta ratones*. San Diego, CA: Harcourt Brace Jovanovich, 1989. Simple, colorful illustrations and brief text tell the story of three white mice that find three jars of paint and discover both primary colors and color mixing. They also demonstrate the value of camouflage. Mixing colors has never been more fun!

Wells, Rosemary. *Bunny Cakes*. New York: Penguin Books, 1997. Grandma's birthday is the occasion for two cakes—an earthworm one and an angel surprise one with raspberry fluff icing—one made by Max and one by his sister. Spills by Max, the clumsy younger rabbit, require numerous trips to the grocer for replacement ingredients. Written grocery lists and a sign are key elements of the plot.

Wolff, Nancy. *Tallulah in the Kitchen*. New York: Henry Holt, 2005. Tallulah is a cat, but she loves to cook. Pancakes are her specialty. She uses a recipe, makes lists, shops, has appropriate tools, follows the rules, shares her results, and generally has a good time. Some of the humor in the asides is lost on young readers, but the bright colors in the detailed illustrations provide great observation practice.

