

Cooking in the Classroom

""""Muffins

Materials needed:

Muffin mix (recipe on back)
Measuring spoons (Tbs., 1/2 Tbs., & tsp.)
Cooking oil
Water
Small bowls (for mixing)
Plastic spoons (for stirring)
Tongue depressors or craft sticks (for leveling the measuring spoons and stirring)
6 oz. or 8 oz. paper cups
Microwave oven

About Cooking in Early Childhood Classrooms

Cooking activities are both educational and highly motivating to children. A difficulty with some early childhood cooking activities, and one reason why they are done so seldom, is that if children are to do the cooking (as opposed to watching the adult), close adult supervision is required. However, this muffin recipe is designed to allow children to cook *on their own*, with little adult help beyond the introduction.

Rationale

- *Literacy:* Children have opportunities to read and make sense of the words and drawings in the recipe.
- *Math:* Children have opportunities to draw one-to-one correspondence between the drawings in the recipe and the amount of ingredients used in their muffins, and experiences with seriation (the measuring spoons comprise a series--small [1 tsp.], medium [1/2 Tbs.], and large [1 Tbs.]).
- *Science:* Children have the opportunity to notice what happens when they add water and oil to the muffin mix and the dry mix becomes wet and sticky. They can vary the amount of mix, water, or oil or the length of cooking time, make predictions about what will happen, and compare the results.
- *Self-regulation:* Children develop a sense of agency, self-confidence, and independence as they decide for themselves when they are hungry and take steps to address this need on their own.

Beginning the Cooking Activity

If you have a microwave in your class, this activity can be a permanent center in the classroom. It helps to have the oil and water in small squeeze bottles, so that children can squeeze out only as much liquid as they need. One way to introduce children to the idea of cooking on their own is to bring the materials to group time and demonstrate making a muffin. Read through the recipe, explain how it is done, and invite them to the cooking center to make their own muffins during center time. It will be necessary to discuss the **dangers of heat**. Tell (and show) the children that when the muffins finish cooking they will be hot. You can ask the children for their ideas about how to protect themselves from the hot muffins. (A class of four year-old children keeps a pair of mittens at the muffin center that they put on before taking their muffins out of the microwave.) Plan to remain in or near the cooking center for the first day or two, in order to assist children. At first, children will probably ask permission to make a muffin, but they will gradually learn that this is available to them as another center activity.

'Conducting the Activity

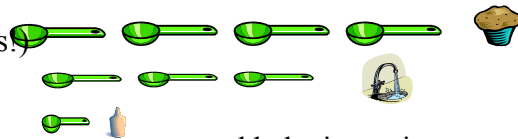
This is a particularly good activity to stimulate children's scientific reasoning. After you demonstrate how to make the muffins once, children may choose not to follow the recipe. Often children will not be concerned with the amount of the ingredients they are mixing together. This will give you an opportunity to help the children make hypotheses and test their ideas. For example, if a child does not add enough liquid (a common mistake when children are not careful about spilling water when adding it to the muffin mix), the muffin will not rise. The child may become aware that his or her muffin does not look like other children's. You might ask, "I see you keep getting short muffins. What do you think is going on?" Some children believe that they get a short muffin because it hasn't cooked long enough (a logical hypothesis, given that the children can watch the muffins "grow" in the microwave as they cook). If you allow the child to test this hypothesis by cooking it longer, the room may smell for a while, but the child will learn a valuable lesson about finding out the answers to questions. You might ask, "Did it work the way you thought it would?" or "What else could you try to get a taller muffin?" When you use words such as "shorter" and "taller," you are drawing children's attention to mathematical relationships. You can promote cooperation by suggesting that children consult other children whose muffins turn out differently. You might say, for example, "I noticed that Jason's muffin turned out tall. Did he do anything different?" Children can be encouraged to experiment with adding other ingredients to the muffins, such as raisins, chopped apples, grated cheese, etc. As they discover good additions, they can write down their discoveries in a book (another good literacy activity). When children are encouraged to experiment, they learn that errors are often important steps along the way to finding answers.

Recipe

4 Tablespoons muffin mix (see below)

3 1/2 Tablespoons water (**not** 3 & 1/2 tablespoons.)

1 teaspoon oil



Put everything in a small bowl and stir slightly. Pour into a paper cup and bake in a microwave oven on high for approximately 45 seconds (smaller ovens may require a longer cooking time).

[Note: This recipe can be illustrated with drawings of 4 tablespoons of muffin mix (with a drawing of the muffin mix container), 3 one-half tablespoons of water (with a faucet to represent the water), and 1 teaspoon of oil (with a drawing of the oil bottle). You might even want to use different colors of spoons for the different sizes, and use these colors in the illustration. This way even prereaders can "read" and follow the recipe.]

Muffin Mix Recipe

8 cups flour

1 1/2 cups dried milk

3/4 to 1 1/2 cups sugar*

4 Tablespoons baking powder

1 Tablespoon salt

Mix everything together and store in an airtight container. Makes enough mix for approximately 45 muffins.

* If you make the mix with the smallest amount of sugar, each muffin will contain approximately 3/4 teaspoon of sugar. Made with the largest amount of sugar, each muffin will contain approximately 1 1/2 teaspoons of sugar.