

# FOODMASTER MIDDLE

## A food and science activity book for grades 6-8

### BACKGROUND

FoodMASTER (Food, Math and Science Teaching Enhancement Resource) is a compilation of programs aimed at using food as a tool to teach mathematics and science. It is our theory that if food is used as a tool to teach mathematics and science, students will be better prepared to demonstrate and apply mathematic and scientific knowledge. Because students encounter food on a daily basis, they have preexisting contextual experiences preparing them for learning new and relevant mathematics and science material.

Food is conducive to hands-on, active learning that uses multiple senses to engage students in the learning process. Utilizing food allows for an interdisciplinary approach to learning concepts and ideas in a variety of scientific subjects like general science, biology, chemistry, microbiology, nutrition, and health. Additionally, food labs are a dynamic way to teach mathematical concepts such as numbers and operations, algebra, geometry, measurement, and problem solving.

The knowledge and skill development that can be inspired by the FoodMASTER approach is limitless. Proper use of measurement tools, data collection and interpretation, application and generalization, classification and organization, graphing and comparative analysis, understanding chemical changes, observing functions of ingredients and controlling variables, pricing, critical thinking, self-directed learning, and team building are only a few of the potential knowledge and skill development areas for middle grade students experiencing FoodMASTER's scientific inquiry labs.

### INTRODUCTION

Welcome to the FoodMASTER Middle science program! The curriculum contained in this packet was developed by FoodMASTER with funding from the National Institutes of Health: Science Education Partnership Award to present middle grade students with ten basic topics in foods. Each topic area includes hands-on lab investigations to take your students on an exciting and innovative exploration of food and science. These engaging labs will have your students developing skills and thinking about learning in a new fashion that is fun and exciting for everyone involved. For each lesson in this manual you will find a summary of the unit, objectives, science content standards addressed, background content information, materials needed, and a suggested instruction plan including teacher tips and answer keys.

The student workbook pages are designed to be student friendly and easy for both teachers and students to follow. Teachers are encouraged to read through the labs ahead of time and decide on the best format (teacher-directed, small groups, or individual) for completing each lab with their students. The chosen method of implementation may vary depending on the amount of time, equipment and supplies, and number of classroom adult supervisors available, as well as safety considerations and learner needs.

Each of the ten FoodMASTER Middle student chapters includes a brief introduction, one to three hands-on lab investigations, and a health-related investigation. Reading introductions introduce students to new vocabulary words and engage students in the unit topic. Students will develop science inquiry and problem solving skills using real food to complete “Food Exploration” lab investigations. A flexible and creative classroom atmosphere will enhance the hands-on curriculum.

## **WHAT IT TAKES TO BE A FOODMASTER**

Are you enthusiastic enough to be a FoodMASTER? The hands-on FoodMASTER activities in this book take the commitment of a special teacher who is willing to take the extra time to bring food and supplies into the classroom. It also requires that teachers manage their classrooms in a more open fashion that they may not be comfortable with. However, if you desire to see science come to life for your students, you will find this method very enjoyable, rewarding, and satisfying. Teachers desiring food based activities with less mess and time commitment may choose the computer aided format or combined format. Either way, you will be filled with satisfaction when you see students applying real-life science in the classroom and you hear students share their stories of food lab cooking at home.

We hope that you will find the materials packet easy to use and that it provides you with the information you need to convey food and science concepts and knowledge to students in your class with ease and simple preparation. If you are interested in becoming more knowledgeable about other FoodMASTER materials, please visit [www.foodmaster.org](http://www.foodmaster.org) for more information.

## **FOOD SAFETY NOTE**

It is very important for you to follow and model good food safety behaviors! Your students will learn proper food safety practices in Chapter 2 of the curriculum. You will need to continue to reinforce good sanitation practices throughout the curriculum. Please be sure to remind students to never eat foods until they are instructed, and be sure students have washed their hands before preparing or eating foods. Never serve raw or undercooked meats or eggs, unpasteurized milk, spoiled foods, or expired foods. For lab investigations involving eggs, try buying eggs pasteurized in their shells.

Keep your classroom safe by thoroughly washing all kitchen utensils, supplies, equipment, counters, desktops and sinks. You should also maintain a Material Safety Data Sheet (MSDS) for all chemicals and cleaning supplies used or stored in the classroom. Cleaning supplies and sharp objects, such as paring knives and can openers, should be safely stored away for teacher use only. Keep dry food items safely stored in tight containers and perishable items stored in a refrigerator or in a cooler with ice for short periods of time.

Finally, be aware of any food allergies or intolerances. Students with food allergies could have mild to severe reactions if they taste, touch, or, in some cases, even smell their food allergen. Modify activities, when needed, to prevent allergic reactions and consider providing an appropriate alternate snack for students with food allergies or intolerances.