

Introduction

This collection of activities for grades three through six offers classroom teachers and their students a wonderful opportunity to explore the world of agriculture in their community using traditional classroom disciplines. We developed them using the following guiding principles: First of all, they must work for the students and the teachers. The activities are designed to be fun and challenging while inspiring students to learn, ask questions and pursue knowledge. Because it has proved an effective teaching technique, hands-on, active learning is used. Complete instructions, readily available materials and thorough background information, including extensive resources for further information, give teachers the tools necessary for success. We don't want to add more to the busy teacher's schedule; no Friday afternoon agriculture lessons. For this reason we have integrated math, science, social studies, history and language arts into a complete learning experience. This material is designed to teach traditional disciplines using an agriculture theme. Thus, you, the teacher, are addressing the required curriculum using agricultural information from the students' home region.

The guide's format is a result of a teacher survey, and the activities have been field tested at diverse school sites. Many of the activities take place in small groups where students work together to solve problems and apply their knowledge. Some activities take place outside on the school grounds or in preparation for attending Marin's outdoor education school, Walker Creek Ranch, situated on a 1700- acre former dairy ranch in west Marin. The sections start with activities that relate agriculture to the students' knowledge, then relate the activities to the broader community and the world. Final activities in each section focus on problem-solving and student participation.

While addressing these guiding criteria we have also kept the California Department of Education's Frameworks for education sitting in front of us throughout. Following is a brief description of how these materials meet the principles and content requirements set forth in the Frameworks:

Mathematics Framework

The activities encourage students to estimate numbers and distances. They are called upon to do mental computations and develop the ability to approximate. Measurements are common to many activities. Observation of geometric patterns and work with spatial reasoning are also found within these activities. Plants are great simulators of patterns, and seasonal changes are explored as an example of rhythms in agriculture. Many of the activities require students to collect data and manipulate information. This provides concrete experience with writing statements, developing theories and recognizing principles. Several activities present real world problems and encourage students to think about ways to solve them and verify solutions.

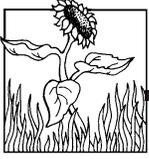
Science Framework

This agricultural topic includes the three basic fields of scientific study: physical, earth and life sciences. Students experience controversy free of dogmatism and open to inquiry. Technology, its relation to agriculture and implications for society are discussed. Hands-on experiences are emphasized in these activities as well. Ideas are introduced with inquiry and investigation. We have devised questions for discussion to allow challenge and success to learners of varied levels and types. Vocabulary is not presented for rote learning but as an integral part of the learning experience. Outside learning situations, speakers and field trips are repeatedly encouraged to help students realize that learning is not limited to the classroom. Activities have built-in assessment; the performance and investigation within the activities fulfill this function.

History-Social Science Framework

Within this collection of activities virtually every one of the K-12 Goals and Curriculum Strands are ad-





dressed. Special attention has been paid to economic, geographic, cultural, historical and ethical literacy. Critical thinking is encouraged throughout, and civic values are inherent in many of the activities. The lessons are integrated in their approach to teaching history-social science. The diverse cultural history of agriculture in Marin County is discussed in several activities. Within each section the information is built from the individual student's experience to their community and the world. Exploratory methods for learning are emphasized throughout the guide. Controversial issues have not been skirted but are treated equitably so students can review facts and make independent decisions. The activities encourage students to consider their community and their role within it to help them develop a commitment to public service.

English-Language Arts Framework

These materials integrate the whole of language learning, including listening, speaking, reading and writing, with the teacher supporting grammar, spelling and handwriting instruction. Critical thinking is applied to both the comprehending and composing processes of oral and written language. The content of the materials to be read is diverse and encourages development of comprehension. Techniques and activities interrelate speaking, reading and writing with thinking. New vocabulary is introduced in multiple contexts. Students are given the opportunity to practice and use spelling, grammar, punctuation and handwriting. The use of language is related to other content areas, and extensions are provided, many extending students' activities beyond the classroom. Students with varied learning modes and abilities can use the activities with success.

See page 133 for an Activity Index that correlates activities to the California Learning Standards for grades 3-6.

