



# Introduction

## M.A.T.E.S.

This guidebook is designed to inform teachers about Penobscot Marine Museum and to help them use the museum's resources in their curriculum. Specifically, we want to show:

- **that the Museum has extensive, well-organized, and pertinent information to share with schools;**
- **that accessing this information will help teachers address Performance Indicators not only in History, but also in Science, Math, Economics, English Language Arts, and other areas;**
- **that the guidebook's format can help teachers plan more proactively when, how, and what to access from the museum; and**
- **that there are multiple uses for museum materials in fostering related ongoing activities, projects, and research, beyond a one-time museum visit or presentation.**

**M.A.T.E.S.** is not intended to teach content, nor is it curriculum. It is a tool to allow teachers to see the scope of our resources and to decide how best to use them. Content is available through a visit to the museum, a classroom presentation by a museum educator, and through our education website. By using **M.A.T.E.S.** as a starting point, options for content learning will be more effective.

Penobscot Marine Museum's mission is to tell the story of the maritime people of the larger Penobscot Bay and mid-Maine coast areas, their towns and the vessels they built and commanded. It's a story about their varied occupations, their use of natural resources, and their unique relationships with the rest of the country and with the world. This story is difficult to tell because its components are so tightly interconnected; topics weave together to form a whole cloth, and it is difficult to isolate specific threads.

## Topics

Within the story of the coast and its people, this guidebook presents specific units, divided almost artificially because of the integrated nature of the larger story. For example, *Fisheries* could go with *Working the Bay*, with *Our Maine Ancestors*, or, as we have done, in a unit by itself. *Ships and Shipbuilding* likewise fits into several outlines: *Working the Bay*, *Fisheries*, *Our Maine Ancestors*, and *Maine and the Orient*. We have made logical decisions about where to put bodies of information, knowing that teachers understand that no individual bit of information exists in a vacuum. Each

unit division is a convenient tool, creating an organized way to present resources. Teachers may want to focus on certain parts of units, combine topics, emphasize certain parts over others within one unit, and generally individualize the information.

## Grade Level Fit

Our outlines do not focus on any specific age or grade grouping. They are intended to present an overview of information. We feel that teachers are in the best position to decide what topics best fit their students' needs and capabilities. The Learning Results and Activities sections following each outline help conceptualize the topic in an age-appropriate manner. Thus, each module may easily be adapted to meet the needs of students of all ages.

## Assessment

Assessment—a subject very important to teachers—is not addressed in the guidebook, nor on our education website. It is an area beyond the scope of this project, as it requires careful construction and use of curriculum. We hope that our Learning Results selection and website materials will help teachers at the assessment level.

## Structure

Each topic section of the guidebook contains:

- **An introduction with broad learning goals;**
- **An outline of the scope of information within the topic;**
- **A list of the most relevant Performance Indicators for each of the four grade groupings;**
- **A list of ideas for related activities or projects that expand on the topic and address Performance Indicators more thoroughly; and**
- **A list of resources for further information, or for pre-reading or follow-up investigation by students or teachers. Most of the books listed are available for loan through the MaineCat Statewide Library Catalog.**

The selection of Performance Indicators was made on the basis of apparent relevance. Others could be related through good interdisciplinary teaching, and some teachers may disagree with our choices. We hope teachers will regard our choices as appropriate and helpful. We chose to tackle the Learning Results at the Performance Indicator level because we wanted our project to be as useful as possible to teachers, who work with students at the PI level of skill development. Teachers using **M.A.T.E.S.** should be sure to look at activities

in sections above and below their own grade level; we are well aware of the diversity of learning levels and styles within a classroom. Some activities may be too easy or too difficult for specific students, whereas others may offer an atypical student just the right niche for an individual project.

## English Language Arts

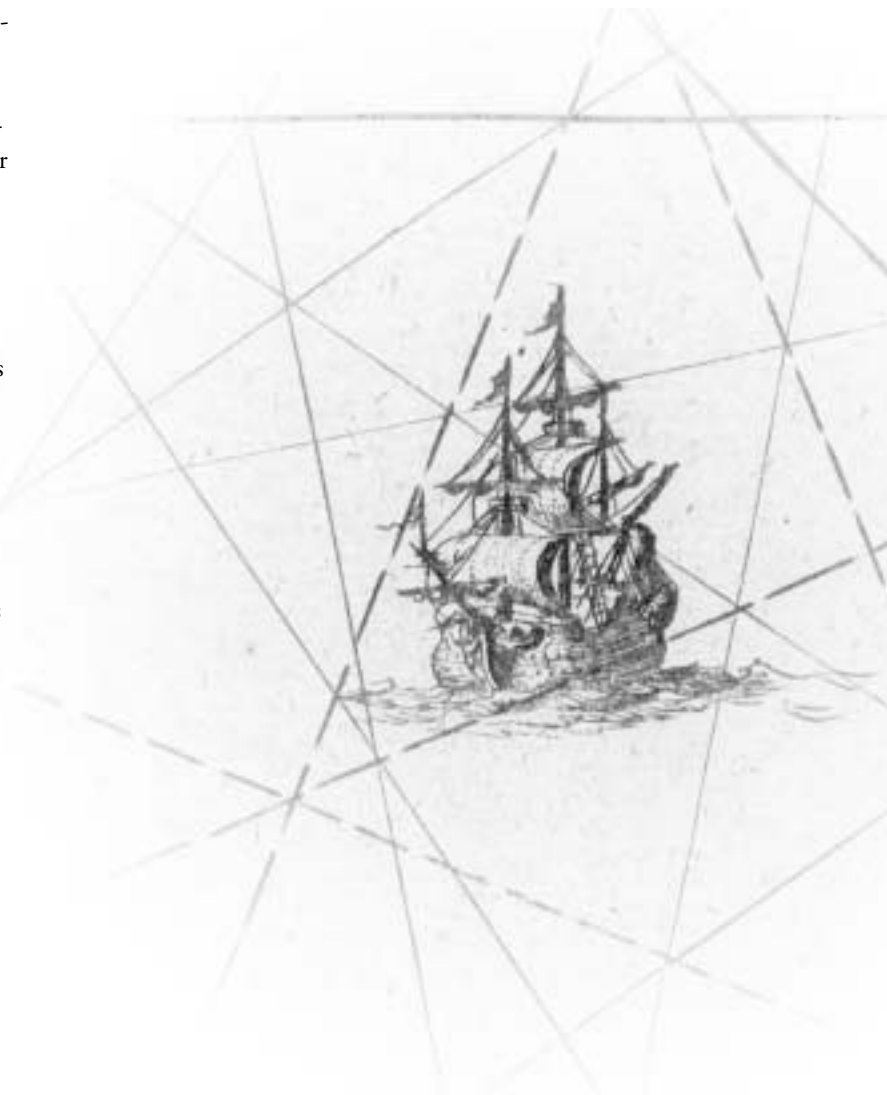
Selecting Performance Indicators in the English Language Arts area was difficult. These skills include sequencing ideas, decoding, editing written work, using conventions, organizing a writing project, or comprehending print. They are so universally applicable that we decided not to include the most general ones in the listed Learning Results selections following each outline. Please refer to the *State of Maine Learning Results* for a complete listing of English Language Arts Performance Indicators, many of which will apply to any and all of the materials in our outlines.

## M.L.T.I.

One exciting element of education in Maine is its laptop program. *The Maine Learning Technology Initiative* (MLTI) has provided seventh and eighth graders around the state with the opportunity to use laptops daily to support their curriculum. We hope that teachers and students will incorporate our education website resources into their use of this technology.

## Future Directions

Maine is in the process of revising the Learning Results—changing grade groupings, adding at least one skill area, and looking at individual Performance Indicators. Some revisions are already posted at [www.maine.gov/education/lres/review](http://www.maine.gov/education/lres/review) and others will be added soon. In January 2007 the revised package will be presented for consideration to the Maine Legislature. We plan to incorporate changes in the Learning Results, as well as feedback from teachers and curriculum coordinators about the guidebook's content and activity suggestions, into future editions of M.A.T.E.S. We hope our users will help us improve.



# Content Standards

## Career Preparation

- A. PREPARING FOR THE FUTURE:** Students will be knowledgeable about the world of work, explore career options, and relate personal skills, aptitudes, and abilities to future career decisions.
- B. EDUCATION/CAREER PLANNING AND MANAGEMENT:** Guided by self assessment and personal career interests, students will integrate school- and work-based experiences to develop their career goals.
- C. INTEGRATED AND APPLIED LEARNING:** Students will demonstrate how academic knowledge and skills are applied in the workplace and other settings.
- D. BALANCING RESPONSIBILITIES:** Students will acquire and apply skills/concepts required to balance personal, family, community, and work responsibilities.

## English Language Arts

- A. PROCESS OF READING:** Students will use the skills and strategies of the reading process to comprehend, interpret, evaluate, and appreciate what they have read.
- B. LITERATURE AND CULTURE:** Students will use reading, listening, and viewing strategies to experience, understand, and appreciate literature and culture.
- C. LANGUAGE AND IMAGES:** Students will demonstrate an understanding of how words and images communicate.
- D. INFORMATIONAL TEXTS:** Students will apply reading, listening, and viewing strategies to informational texts across all areas of curriculum.
- E. PROCESSES OF WRITING AND SPEAKING:** Students will demonstrate the ability to use the skills and strategies of the writing process.
- F. STANDARD ENGLISH CONVENTIONS:** Students will write and speak correctly, using conventions of standard written and spoken English.
- G. STYLISTIC AND RHETORICAL ASPECTS OF WRITING AND SPEAKING:** Students will use stylistic and rhetorical aspects of writing and speaking to explore ideas, to present lines of thought, to represent and reflect on human experience, and to communicate feelings, knowledge, and opinions.
- H. RESEARCH-RELATED WRITING AND SPEAKING:** Students will work, write, and speak effectively when doing research in all content areas.

## Health and Physical Education

### HEALTH EDUCATION

- A. HEALTH CONCEPTS:** Students will understand health promotion and disease prevention concepts.

- B. HEALTH INFORMATION, SERVICES, AND PRODUCTS:**

Students will know how to acquire valid information about health issues, services, and products.

- C. HEALTH PROMOTION AND RISK REDUCTION:** Students will understand how to reduce their health risks through the practice of healthy behaviors.

- D. INFLUENCES ON HEALTH:** Students will understand how media techniques, cultural perspectives, technology, peers, and family influence behaviors that affect health.

- E. COMMUNICATION SKILLS:** Students will understand that skillful communication can contribute to better health for them, their families, and the community.

- F. DECISION-MAKING AND GOAL SETTING:** Students will learn how to set personal goals and make decisions that lead to better health.

### PHYSICAL EDUCATION

- A. PHYSICAL FITNESS:** Students will acquire the knowledge needed to be physically fit and take part in healthful physical activity on a regular basis.

- B. MOTOR SKILLS:** Students will develop motor skills and apply these to enhance their movement and physical performance.

- C. PERSONAL AND SOCIAL INTERACTION:** Students will demonstrate responsible personal and social behaviors in physical activity settings.

## Mathematics

- A. NUMBERS AND NUMBER SENSE:** Students will understand and demonstrate a sense of what numbers mean and how they are used.

- B. COMPUTATION:** Students will understand and demonstrate computational skills.

- C. DATA ANALYSIS AND STATISTICS:** Students will understand and apply concepts of data analysis.

- D. PROBABILITY:** Students will understand and apply concepts of probability.

- E. GEOMETRY:** Students will understand and apply concepts of geometry.

- F. MEASUREMENT:** Students will understand and demonstrate measurement skills.

- G. PATTERNS, RELATIONS, FUNCTIONS:** Students will understand that mathematics is the science of patterns, relationships, and functions.

- H. ALGEBRA CONCEPTS:** Students will understand and apply algebraic concepts.

- I. DISCRETE MATHEMATICS:** Students will understand and apply concepts in discrete mathematics.

- J. MATHEMATICAL REASONING:** Students will understand and apply concepts of mathematical reasoning.
- K. MATHEMATICAL COMMUNICATION:** Students will reflect upon and clarify their understanding of mathematical ideas and relationships.

## Modern and Classical Languages

- A. PERSON-TO-PERSON COMMUNICATION:** Students will develop communication skills for direct conversation and written correspondence.
- B. READING, LISTENING, AND VIEWING FOR UNDERSTANDING:** Students will develop reading, listening, and viewing skills so they can obtain and interpret information.
- C. ORAL AND WRITTEN PRESENTATIONS:** Students will develop skills in oral and written presentation for one-way communication with an individual or a group.
- D. WORKINGS OF LANGUAGE:** Students will gain a deeper understanding of both their native language and of the way language works by discovering patterns among language systems.
- E. CULTURAL PRACTICES, PRODUCTS, AND PERSPECTIVES:** Students will gain insight into another culture through an understanding of its social practices, products, and perspectives.
- F. CROSS-CULTURAL CONNECTIONS AND COMPARISONS:** Students will recognize the connections that link people, countries, and historical periods such as cultural and religious traditions, historical events, political thought, or geography.

## Science and Technology

- A. CLASSIFYING LIFE FORMS:** Students will understand that there are similarities within the diversity of all living things.
- B. ECOLOGY:** Students will understand how living things depend on one another and on non-living aspects of the environment.
- C. CELLS:** Students will understand that cells are the basic units of life.
- D. CONTINUITY AND CHANGE:** Students will understand the basis for all life and that all living things change over time.
- E. STRUCTURE OF MATTER:** Students will understand the structure of matter and the changes it can undergo.
- F. THE EARTH:** Students will gain knowledge about the earth and the processes that change it.
- G. THE UNIVERSE:** Students will gain knowledge about the universe and how humans have learned about it, and about the principles upon which it operates.
- H. ENERGY:** Students will understand concepts of energy.

- I. MOTION:** Students will understand the motion of objects and how forces can change that motion.
- J. INQUIRY AND PROBLEM SOLVING:** Students will apply inquiry and problem-solving approaches in science and technology.
- K. SCIENTIFIC REASONING:** Students will learn to formulate and justify ideas and to make informed decisions.
- L. COMMUNICATION:** Students will communicate effectively in the applications of science and technology.
- M. IMPLICATIONS OF SCIENCE AND TECHNOLOGY:** Students will understand the historical, social, economic, environmental, and ethical implications of science and technology.

## Social Studies

### CIVICS AND GOVERNMENT

- A. RIGHTS, RESPONSIBILITIES, AND PARTICIPATION:** Students will understand the rights and responsibilities of civic life and employ the skills of effective civic participation.
- B. PURPOSE AND TYPES OF GOVERNMENT:** Students will understand the types and purposes of governments, their evolution, and their relationship with the governed.
- C. FUNDAMENTAL PRINCIPLES OF GOVERNMENT AND CONSTITUTIONS:** Students will understand the constitutional principles and the democratic foundations of the political institutions of the United States.
- D. INTERNATIONAL RELATIONS:** Students will understand the political relationships among the United States and other nations.

### HISTORY

- A. CHRONOLOGY:** Students will use the chronology of history and major eras to demonstrate the relationships of events and people.
- B. HISTORICAL KNOWLEDGE, CONCEPTS, AND PATTERNS:** Students will develop historical knowledge of major events, people, and enduring themes in the United States, in Maine, and throughout world history.
- C. HISTORICAL INQUIRY, ANALYSIS, AND INTERPRETATION:** Students will learn to evaluate resource material such as documents, artifacts, maps, artworks, and literature, and to make judgments about the perspectives of the authors and their credibility when interpreting current historical events.

### GEOGRAPHY

- A. SKILLS AND TOOLS:** Students will know how to construct and interpret maps and use globes and other geographic tools to locate and derive information about people, places, regions, and environments.

- B. HUMAN INTERACTION WITH ENVIRONMENTS:** Students will understand and analyze the relationships among people and their physical environments.

#### **ECONOMICS**

- A. PERSONAL AND CONSUMER ECONOMICS:** Students will understand that economic decisions are based on the availability of resources and the costs and benefits of choices.
- B. ECONOMIC SYSTEMS OF THE UNITED STATES:** Students will understand the economic system of the United States, including its principles, development, and institutions.
- C. COMPARATIVE SYSTEMS:** Students will analyze how different economic systems function and change over time.
- D. INTERNATIONAL TRADE AND GLOBAL INTERDEPENDENCE:** Students will understand the patterns and results of international trade.

#### **Visual and Performing Arts**

- A. CREATIVE EXPRESSION:** Students will create and/or perform to express ideas and feelings.
- B. CULTURAL HERITAGE:** Students will understand the cultural contributions (social, ethical, political, religious dimensions) of the arts, how the arts shape and are shaped by prevailing cultural and social beliefs and values, and recognize exemplary works from a variety of cultures and historical periods.
- C. CRITICISM AND AESTHETICS:** Students will reflect upon and assess the characteristics and merits of art works.