



"I Remember"

Art Supplement

from

Spirit of the Estuary

Courtesy of BTNEP

Spirit of the Estuary

Using Art to Understand Ecology

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Lessons Highlighted in this training are from the BTNEP product:

Spirit of the Estuary

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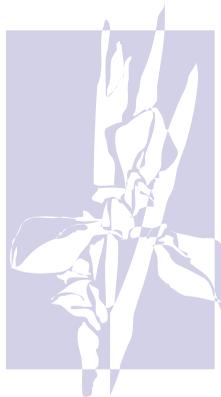
Dedication

This curriculum is dedicated with thanks and appreciation, to all Louisiana teachers who have shared wetland education with their students in order to create an environmentally aware and active citizenry.

Susan Testroet-Bergeron
BTNEP Education Coordinator

This book is dedicated to my fellow Louisiana artists who truly appreciate this unique place where we reside, and work at capturing the spirit that is everchanging in our world so that others will not forget.

Marian Brister Martinez
Artist/Illustrator



Meet the Authors

Mary M. Banbury, Ph.D.

Mary M. Banbury, Ph.D. retired after 32 years (and Hurricane Katrina) from the University of New Orleans. As a Professor, she taught courses in gifted education, inclusion, differentiated instruction, and mild/moderate disabilities. She is currently a Visiting Professor at the University of Nevada, Las Vegas, in the Departments of Special Education and Curriculum & Instruction. She was also a Curriculum Consultant for the Public Lands Institute at UNLV where she co-authored curriculum for the Red Rock Desert Learning Center Pilot Program and Forever Earth, a 70-foot houseboat/floating water classroom on Lake Mead.



Mary has been developing environmental curricula for over 15 years, beginning with *Welcome to the Wetlands: An Activity Book for Teachers*. She was coordinator of a federal grant developing an alternative science curriculum for children with exceptionalities and was Principal Investigator for a state grant “Project CEED: Coastal Education for Economic Development.” The National Association of Gifted Children awarded the National Outstanding Curriculum Award to *Lessons on the Lake: An Educator’s Guide to the Pontchartrain Basin* that Mary co-authored with Anne Rheams, Sue Ellen Lyons, Sharon Flanagan, Michael Greene, and Dinah Maygarden. Mary has also received awards for her community service and her teaching. She received the first Outstanding Faculty Award from the College of Education and the first Seraphia B. Leyda Excellence in Teaching Award from the University of New Orleans.



Anne B. Rheams

Anne Rheams is Deputy Director of the Lake Pontchartrain Basin Foundation. In this position she directs multiple LPBF programs in relation to the Foundation’s mandate to improve water quality and restore and protect natural habitat. She has been with the Foundation since 1992 when she began as Education Director. Ms. Rheams is an Adjunct Instructor in the College of Urban and Public Affairs at the University of New Orleans where she teaches Environmental Planning classes. Ms. Rheams has been a member of many environmental curriculum development teams including the Louisiana Public Broadcasting's award-winning *Enviro-Tackelbox* and *Lessons on the Lake: An Educator's Guide to the Lake Pontchartrain Basin ."* She is on the Board of Directors of A Studio in the Woods, a non-profit organization that integrates art and ecology.

Sue Ellen Lyons

Sue Ellen Lyons began her teaching career in 1966. She is presently teaching biology, environmental science and geology at Holy Cross School in New Orleans, where she has served since 1978. Sue Ellen is an adjunct professor at Herzing College, teaching Environmental Science both in-class and online. She has also been an adjunct instructor in the Education Department at UNO, as well as at Nunez Community College.



During her career, Sue Ellen has received awards at the local, state and national levels, including the Presidential Award for Excellence in Science Teaching and the National Wetlands Educator of the Year Award.



Marian Brister Martinez

Marian Brister Martinez is a Louisiana artist who grew up in the Barataria-Terrebonne Estuary near the mouth of the Mississippi River. Her favorite childhood pastime were her visits to the barrier islands near her home. Ms. Martinez is a free-lance artist/illustrator. She is published in *Louisiana Laurels*, a book of poetry and essays written and illustrated by Louisiana authors and artists. Her commissions have included numerous t-shirt and logo designs for environmental litter awareness programs for corporate and non-profit companies. Her work encompasses a variety of mediums and subject matter including pen & ink architectural drawings, oil on canvas figurative paintings, watercolors, and traditional religious iconography.

Ms. Martinez holds a bachelor of fine arts from Louisiana State University. Her work can be viewed on her Web site at: <http://www.pleiadesfineart.com>

INTRODUCTION

The Spirit of the Estuary: Using Art to Understand Ecology

Dr. J. Robert Oppenheimer made the following observation after viewing exhibits at the Exploratorium:

“Art is included, not just to make things pretty, although it often does so, but primarily because artists make different kinds of discoveries about nature than do physicists or biologists. They also rely on a different basis for decision-making while creating their exhibits. But both artists and scientists help us notice and appreciate things in nature that we had learned to ignore or had never been taught to see. Both art and science are needed to fully understand nature and its effects on people.”

New Horizons (n.d.) Retrieved July 25, 2005 from <http://www.newhorizons.org>

EDUCATIONAL GOAL

The goal of *The Spirit of the Estuary: Using Art to Understand Ecology* is to educate students, grades 5-8, about the Barataria-Terrebonne Estuary and the priority issues affecting the basins. It is a multi-disciplinary curriculum, intended for use by teachers in such disciplines as science, language arts, social studies, fine arts, special education, and gifted. It is not strictly a science text. *The Spirit of the Estuary: Using Art to Understand Ecology* is a supplemental curriculum; it is an enrichment curriculum. It will allow educators to differentiate according to learning styles preferences, interests, strengths, or talents. It offers a unique opportunity to bolster estuary/wetlands awareness across content areas.

This curriculum guide provides easy access to information on environmental issues surrounding the estuary. In addition, it integrates art and science as a means to stimulate interest and to promote student achievement, engagement, and persistence in school. Instead of the traditional approach that is so common in science curriculum guides, this book will use the visual arts, music, dance, drama, creative writing, and technology to challenge the analytic, creative and practical skills of students while increasing public perception of significant environmental issues.

The artistic endeavors will provide students with an understanding of the Barataria-Terrebonne Estuary and give them the skills to address environmental problems. Since research in learning indicates that students retain thinking skills processes and attitudes about subjects, studies, and self rather than facts, the educational guide will actively engage students in learning about the estuary while emphasizing personal connections and commitment.

The ultimate goal of *The Spirit of the Estuary: Using Art to Understand Ecology* is that in addition to learning about the estuary, students will also acquire a strong sense of stewardship. Action requires knowledge, but it also requires passion. In the words of Charles Fowler, Former Director, National Cultural Resources Washington D.C., “Science and technology do not tell us what it means to be human. The arts do.”

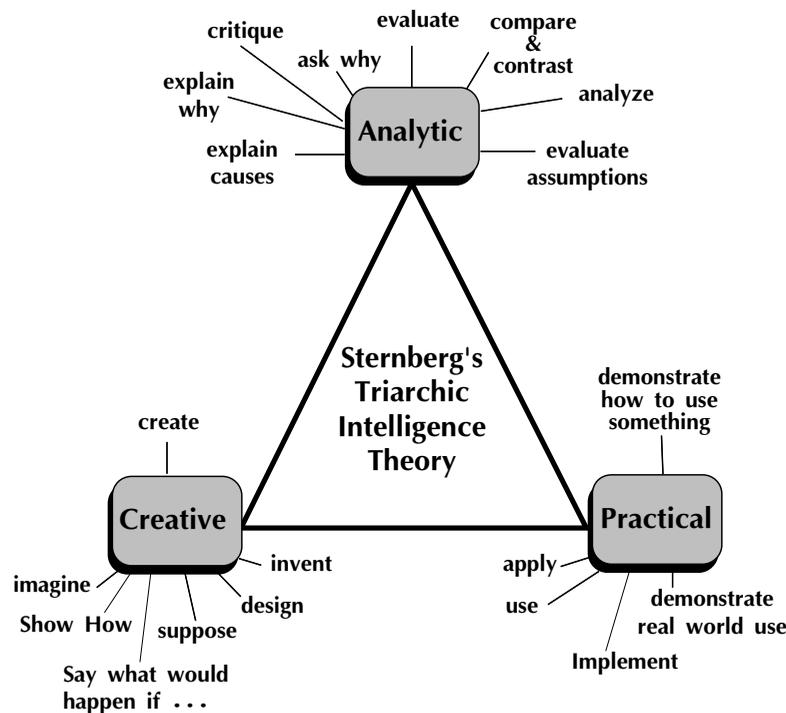
EDUCATIONAL OBJECTIVES

1. To develop and heighten a personal understanding of environmental issues connected to the Barataria-Terrebonne Estuary;
2. To create teaching activities and strategies that help students develop their analytic, creative, and practical capabilities as they learn about significant environmental concepts.

- To use the arts as ways to increase critical and creative thinking skills, develop problem-solving abilities, and promote engagement in learning about selected topics critical to the understanding and preservation of the Barataria-Terrebonne Estuary.

EDUCATIONAL THEORY

The Spirit of the Estuary: Using Art to Understand Ecology is based on the learning theory of Robert J. Sternberg (1985). *Beyond IQ: A Triarchic Theory of Human Intelligence*. New York: Cambridge University Press. According to Yale Professor Robert Sternberg, creative work requires a balance among the following three abilities:



ANALYTIC

Analytic ability is typically considered to be a higher-order thinking skill, a critical thinking ability. A person with this skill possesses the ability to identify, comprehend, and analyze a problem, and to propose and evaluate solutions.

CREATIVE

Creative ability is a synthetic thinking skill. A person with this skill possesses the ability to make unique or original connections, often resulting in insightful, intuitive responses or solutions.

PRACTICAL

Practical ability is a functional skill. A person with this skill possesses the ability to relate abstract ideas to everyday situations, to translate analytic and creative skills into practical ones, to implement solutions, and to transform ideas into accomplishments.

The graphic organizer delineates a list of verbs that should assist educators in developing questions and designing activities that will promote the analytic, creative, and practical abilities of their students, thus enhancing their creative work.

STRUCTURE OF THE CURRICULUM

The Spirit of the Estuary: Using Art to Understand Ecology transforms Robert Sternberg’s Triarchic Model into three themes: Sensing the Spirit of the Estuary, Capturing the Spirit of the Estuary, and Preserving the Spirit of the Estuary. The following chart illustrates this transformation and delineates the questions and descriptions used to assign lessons to a theme.

ESSENTIAL QUESTIONS	THEORETICAL MODEL: ROBERT STERNBERG’S TRIARCHIC MODEL	SECTION THEMES	LESSONS
How can art help me see, hear, touch, taste, and smell the estuary?	Analytic	Sensing the Spirit of the Estuary	Using art to know, comprehend, apply, and analyze, and evaluate information about the estuary
How can creating art help me understand the estuary?	Creative	Capturing the Spirit of the Estuary	Creating artistic products and developing and participating in artistic performances to express thoughts and feelings that capture the spirit of the estuary.
How can I use art to protect the estuary?	Practical	Preserving the Spirit of the Estuary	Creating artistic products and developing and participating in artistic performances to promote and encourage stewardship of the estuary.

COMPONENTS OF THE LESSONS

Setting the Stage introduces the lesson. It provides background information for educators or an explanation of the topic to educators and students. Sometimes it actually becomes the “hook,” the motivator, or “setting the stage” for students.

Objectives guide the teaching of each lesson.

Materials list equipment, print materials, and items for teaching the lesson.

Getting Ready gives suggestions to educators on teaching preparation.

Process delineates step-by-step instructional procedures.

Questions for Journaling serve as a catalyst for creative reflection, connecting students’ thoughts and feelings with the study of the estuary.

Assessment provides rubrics or checklists that evaluate content, product, or performance.

Extensions offer ideas for follow-up activities.

Resources list books, Internet sites, and materials for educators and students.

Handouts for students are developed for almost all of the lessons. Each student handout is listed in the “Materials” section as well as in the “Process” section.

ART & ECOLOGY

Why do we need art to understand ecology? Charles Fowler answers this question in his essay “Every Child Needs the Arts”

“Science is not the sole conveyor of truth. While science can explain a sunrise, the arts convey its emotive impact and meaning. Both are important. If human beings are to survive, we need all the symbolic forms at our command because they permit us not only to preserve and pass along our accumulated wisdom but also to give voice to the invention of new visions. We need all these ways of viewing the world because no one way can say it all.”

New Horizons (n.d.). Retrieved July 25, 2005 from <http://www.newhorizons.org>

By merging art and science we can better sense, capture, and preserve the spirit of the Barataria-Terrebonne National Estuary.