

2011 MITS Summer Institutes

For Upper Elementary & Middle School Educators

Science Sleuths: *Inquiry-based Science, Technology and Literacy*

Weekdays, July 11th – 22nd



A minds-on, hands-on professional development experience that will provide you with scientific knowledge, classroom investigations and a network of resources.

Museum Institute for Teaching Science
Offered in six Regions

Southeast Region is a MA DESE sponsored Professional Development Institute

A unique Professional Development Opportunity

- Learn to use inquiry-based, hands-on methods in your classroom.
- Take home a teaching resource kit to ensure your success using inquiry in the classroom.
- Participate in classroom and outdoor experiences.
- Explore educational resources in your community.
- Learn about field trip and classroom resources available from museums, nature centers and other organizations in your region.
- Become part of a network of teachers from your region and across the state.
- Earn PDPs /CEUs or PDPs and 4 graduate credits.

How our Summer Institutes work — In each region, educators at MITS' partner institutions work together to offer a 2-week professional development opportunity. Visit each of the organizations' sites for 1-2 days and participate in both content and skill development sessions taught by professional educators, scientists and other content experts. Depending on the region, daily activities will include: boat trips, nature walks, behind-the-scenes tours of facilities, introductions to resource centers, modeling of inquiry-based activities, and more. Days will include a balance of indoor, classroom-based components and outdoor, field experiences.

All activities are designed to help you meet State Frameworks and create interdisciplinary connections.

Participants can choose to receive 60 PDPs or graduate credit and 90 PDPs. To receive the full number of PDPs participants must attend the fall and spring callback sessions.

Dates: Monday - Friday, July 11-15 and July 18-22, 2011

- Weekdays 9:00 am to 3:30 pm or 8:30 am to 3:00 pm, depending on the region
- Plus 2, two-hour callback sessions during the 2011/2012 school year

Registration cost (Tuition Fee waived in Southeast Region):

- \$250 for one educator
- \$225 for each educator if two from the same school or school district attend
- \$200 for each educator if three or more from the same school or school district attend

MITS encourages teachers to attend the Summer Institutes as collaborative teams.

Graduate credits are available for an additional cost from the following institutions:

- Cambridge College, 4 credits, \$200
- Framingham State College, 4 credits, \$260
- MCLA (Massachusetts College of Liberal Arts), 4 credits, \$150
- Salem State College, 4 credits, \$315
- Worcester State College, 4 credits, \$280

Why Science and Literacy?

MITS' Summer Institutes build on a foundation of inquiry-based science. This year's theme recognizes that literacy shares many of the inquiry skills associated with science and that literacy skills are needed in order to carry out scientific investigations. Literacy tools take on additional meaning, significance, and excitement when applied to a real-world context. The MITS' 2011 Summer Institutes offer you an opportunity to experience this merger and to create the synergy of science and literacy in your classroom.

Regional Descriptions

Partners listed in italics are the coordinating partners for each region.

Berkshire Region

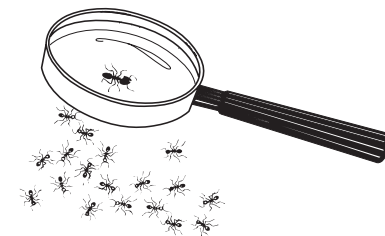
Catapult yourself into the world of hands-on science investigation while developing inventive, interdisciplinary methods that support science and literacy skills in the elementary and middle school classroom. Reverse roles, become a student and learn what questions to ask from field observations.

Dig in, burrow under and ferret around in the unique permanent plot system at Hopkins Forest. Engage in interpreting findings with peers and professionals. Roll up your sleeves and get your hands wet as you probe the terrestrial world and wade into an aquatic macrocosm along the Housatonic River. Gather up your findings and transform your inquiry-based field work into a dramatic production expressing the experience of the scientific discovery while honing literacy skills. Explore the Berkshire Museum's Living Landscape curriculum. Testing out newly acquired models and ideas that translate inquiry based exploration into cogent, substantive writing with students at Silvio O. Conte Community School's S-M-ART Initiative (science, math & arts program). All activities will be linked to MA and NY frameworks.

This workshop is also open to lower elementary school teachers.

Partners: *Berkshire Museum*, Housatonic Valley Association, Marmalade Productions, Hopkins Memorial Forest, Flying Cloud Institute

Callback Dates: Tuesday, November 8, 2011 & Wednesday, April 11, 2012, 4:00 pm - 6:00 pm



Boston Region

Take an adventure into New England's biomes, discovering the processes, plants and animals, and human impacts that help shape the way we see them today. Use geological maps, paleomaps, rocks and fossils to recreate 600 million years of New England's geological and paleontological history. Walk through forest ecosystems and interpret how these environments reflect their origins. Learn how to differentiate a habitat from a biome or ecosystem through exploration of all three natural systems. Discover your local watershed; follow the flow of your backyard streams to the open ocean. Learn how the water choices you make at home and everyday make a difference worldwide. Through the engineering design process, explore how humans have shaped and impacted New England's landscape. Learn how media, movies, and stories affect the way we think about the plants and animals that call New England their home. Using science notebooks, literature, and hands-on investigations, discover methods to connect science and literacy concepts and processes in the classroom. Explore ways to use each of the museums' exhibits as teaching tools in the classroom, while also exploring the resources that each provides.

Partners: Zoo New England's Franklin Park Zoo, Boston Children's Museum, New England Aquarium, Harvard Museum of Natural History

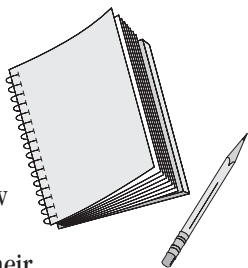
Callback Dates: Tuesday, October 25, 2011 & Wednesday, March 28, 2012, 5:00 pm - 7:00 pm

Merrimack River Region

Journey with us as we explore the Merrimack River Watershed and discover the diversity of life and natural cycles in this ever-changing ecosystem. We will share a unique literary piece each day and discover how to connect science and literacy in meaningful ways for students. Become a dragonfly hunter along the shores of the Merrimack. Have a seat in a wild place, the Ponemah Bog. Investigate succession in a forest, field and wetland. Get a close-up look at vernal pools and examine forest soil decomposers. Identify the biotic life on, in and around stone walls. Learn about the ants of Snake Hill. Climb Mt. Wachusett. Visit Walden Pond, walking in Thoreau's footsteps. Was he a science sleuth, a poet or both? Learn how to use science notebooking as an inquiry tool for daily reflections, data analysis and evaluation, student writing, debate and exchange of ideas. Through our investigations and literacy connections, you will discover new ways to facilitate these connections in your classroom.

Partners: Amoskeag Fishways Learning and Visitors Center, Beaver Brook Association, Massachusetts Department of Conservation and Recreation, Nashua River Watershed Association

Callback Dates: Wednesdays, November 9, 2011 & March 14, 2012, 4:00 - 6:00 pm



North Shore Region

Can literacy instruction be put to work in the service of acquiring knowledge and skills of inquiry-based science? Yes! Find out how, as we: Discover great literature connections to local habitats such as wetland, meadow, forest, and coast. Participate in scientific investigations involving weather, navigation, adaptations of local marine life, energy, ecosystems, and recycling in a closed loop system. Learn about the development of biological classification systems, and apply this knowledge to classify marine organisms. Hone mapping and navigation skills as you create a "Quest" on Misery Island. Explore and utilize "Everyday Science Mysteries" using simple stories to hook students in scientific investigation. Use science notebooking as a way to integrate science and literacy. Employ scientist biographies and other texts for young readers to help model scientific processes and dispositions, and set the context for firsthand investigations. Participants will receive a volume of "Everyday Science Mysteries, Stories for Inquiry-Based Science Teaching."

This workshop is also open to lower elementary teachers.

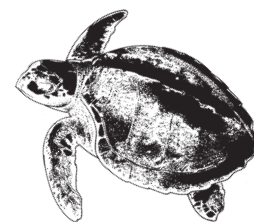
Partners: Mass Audubon Endicott River Wildlife and Ipswich River Sanctuaries, HOBBS Inc., Essex Shipbuilding Museum, Schooner Adventure

Callback Dates: Wednesdays, November 9, 2011 & March 14, 2012, 4:00 pm - 6:00 pm

Southeast Region

This Institute has been selected by MA Dept. of Elementary and Secondary Education as a DESE Professional Development Institute. Registration fee waived.

Explore the Southeast region's incredible natural resources and expand your knowledge and understanding of the ecological changes that have taken place in Massachusetts. Dig into the connections between science and literacy by exploring terrestrial and coastal habitats at the Lloyd Center. Seasonal changes, natural cycles, population dynamics, and adaptation will come to life through hands-on, inquiry-based investigations and literacy resources such as local legends, poetry, and songs. Discover the link between our land and water use through engineering design concepts. Go on a fact-finding mission with Buttonwood Park Zoo to learn how animal structural and behavioral adaptations increase their chance of survival. At Mass Audubon, strengthen your powers of observation and understanding by analyzing natural systems and ecological processes. Work individually and in small groups to research natural features of selected locations. Share procedures, explanations and discoveries, through maps, discussion and writing. At the National Marine Life Center, learn how science, technology, and literacy are involved in marine animal rehabilitation using case studies and data from actual wildlife patients. Follow a



continued next page

Southeast Region, continued

fictional patient from admission to release. Through “satellite telemetry” to post-mortem examinations, track the clues to death and survival. Come investigate the importance of ecological processes and change, wildlife biology, and tagging and mapping technologies.

Partners: Buttonwood Park Zoo, Lloyd Center for the Environment, *Mass Audubon Oak Knoll and Stony Brook Wildlife Sanctuaries*, National Marine Life Center

Callback Dates: Saturdays, November 5, 2011 & March 24, 2011, 9:30 am - 11:30 am

Worcester Region

Through inquiry investigations, observation, data collection, and stories uncover and interpret some of the many mysteries in the natural, cultural and built world we live in. Learn about the diversity of resources available in the Worcester region to enhance your science and literacy classroom teaching. Delve into the emerging science of animal forensics. Explore the relationships between plants and pollinators. Investigate natural systems. Discover how buildings can be designed to take advantage of the site, solar energy, wind and water. Search for visual clues that create a deeper meaning to works of art and the natural world; uncover hidden clues in the lab. Document your investigations and ideas through journals, stories, databases, field guides, hands-on design projects and more as we explore the connections between literacy and science. Experience hands-on, minds-on activities that will expand your understanding, reinvigorate your interest and your students’ natural curiosity in exploring the world of science.



Partners: *Tower Hill Botanic Garden*, EcoTarium, Mass Audubon Wachusett Meadow Wildlife Sanctuary, Learning By Design, The Trustees of Reservations, Worcester Art Museum

Callback Dates: Wednesday, October 19, 2011 & Thursday March 15, 2012, 4:00 pm - 6:00 pm

Cancellation Information:

A \$50 cancellation fee will be charged; deadline for refund requests is July 1st.

For more information on the MITS Summer Institutes contact:

Tim LaVallée, Assistant Program Director

MITS, Inc., 1354 Hancock Street, Suite 302, Quincy, MA 02169

ph: 617-328-1515 • f: 617-328-1516 • tlavallee@mits.org • Visit www.mits.org

To register, please complete and mail this form to:

MITS, Inc., 1354 Hancock St., Suite 302, Quincy, MA 02169

Please include check or purchase order made payable to *MITS, Inc.* with your registration. Online Registration is available at www.mits.org with secure payment through PayPal.

Upon registration participants will receive enrollment forms for graduate credits which must be completed prior to the first day of the Institute.

2011 MITS Summer Institutes

Name: _____

Grade: _____ Principal's Name: _____

School Name: _____

School Address: _____

City: _____ State: _____ Zip: _____

Home Address: _____

City: _____ State: _____ Zip: _____

Work Phone: _____ Home Phone: _____

Email(s): _____

Region you would like to attend: _____

Amount enclosed (please check one):

\$250/1 educator \$225 each/2 educators \$200 each/3 or more educators

List colleagues attending from your school or district:

I plan to register for graduate credit

Registration Deadline: June 3, 2011

Space is limited. Call MITS at 617-328-1515 after deadline for space availability.



MITS, Inc.
Museum Institute for Teaching Science
1354 Hancock Street, Suite 302
Quincy, MA 02169

Investigations this Summer Include:

- Relationships among the biotic, abiotic, and built world
- The diversity of fauna, flora, natural cycles
- Landscape records told in wood, stone, and water
- Making connections between science content and literacy
- Strategies for students to interpret and communicate data
- Using inquiry-based, hands-on, minds-on methods in your classroom
- Applying inquiry-based investigations to technology and the design process
- Human impacts on ever-changing ecosystems
- Natural History of New England's aquatic and terrestrial habitats
- Mapping habitat and animal movement

NON PROFIT ORG
US POSTAGE
PAID
BOSTON MA
PERMIT NO 50233

2011 MITS Summer Institutes • www.mits.org
Offered in six regions across Massachusetts and Southeastern New Hampshire