

Kestrel Educational Adventures
School Programs

www.kestreleducation.org



We inspire wonder, understanding and
connection to the natural world.

A Letter From Our Founder

Dear Fellow Educator,

I founded Kestrel Educational Adventures because I wanted to help improve science education, and to connect young students with the wild world around them. We accomplish these goals by empowering students to conduct authentic research in their own outdoor places. Our programs go far beyond basic information, waking up the scientist inside every learner.

How do we do this?

We listen, question, and think big.

We listen to you, and we design each program specifically to fit your students, your place, and your curriculum. We listen to students, inviting them to work alongside our instructors to seek answers. We prioritize questioning. On a Kestrel adventure, students wonder, investigate, record, process, and make sense of what they find. Our instructors challenge students to look for the big picture, even when it's a little messy and complicated. Students learn to construct knowledge of the natural world from their personal experiences. They practice applying what they've learned to new situations.

We emphasize depth of understanding, seeking to compile observations and experiences into big ideas of how natural systems work. It gives me such joy to see young people thinking and acting as scientists, and we can only do this if we allow them enough freedom to make discoveries.

I believe it's our flexibility and focus on authentic field science that sets us apart. We created this booklet to give you a sense of who we are, what we do, and why it matters.

Happy Adventures,
Jessica Kagle, Ed.M.
Founder & Program Director

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Introduction

OUT OF THE BOOK AND INTO THE WORLD

Our programs are rooted in the natural world, steeped in the practice of inquiry science, and transferable between content areas. They are project-based and meet the Science, Technology / Engineering (STE) Curriculum Frameworks for Massachusetts, along with the federal Next Generation Science Standards.

When you partner with Kestrel, we work with you to:

- Develop natural science programs designed to meet the specific needs, interests and abilities of your students.
- Choose field locations close at hand, often within walking distance, so your class can return again and again.
- Link each age-appropriate lesson with the curricular standards adopted by your school.
- Pair field experiences with projects in the classroom.

We take great pride in thoroughly preparing for each program, but we never plan the outcome, which we believe should happen naturally and spontaneously, drawing on the unique qualities of the landscape and the particular interests, questions and experiences of the students we inspire. When students realize the learning is in their hands, they respond with genuine enthusiasm and excitement.

No matter what program and/or project you choose, our talented curriculum design team can tailor each lesson to be grade-specific and developmentally appropriate for students in grades Pre K-12.

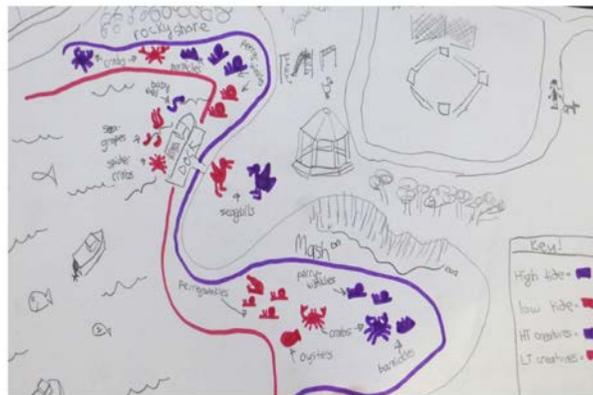
FOR EDUCATORS, BY EDUCATORS

Kestrel programs are created and taught by well trained, practiced, naturalist educators who will ask your students to look beyond the obvious, seek out patterns, connect the dots, and effectively communicate what they have found.

Our unique approach to teaching and learning helps students:

- Ask authentic and original questions
- Build sensory awareness skills
- Strengthen critical thinking abilities
- Cultivate systems thinking
- Synthesize information across disparate disciplines
- Build meaningful constructs of the world around them
- Connect more deeply with local wilds and local communities
- Understand the relationships between humans and the ecosystems that support us
- Cultivate positive environmental behaviors

These are core skills the next generation will need to become and remain scientifically literate citizens as adults.



Choose Your Science Adventure

REAL SCIENTISTS. REAL SCIENCE.

How to Begin your School Program

- Choose your adventure (pages 3-5)
- Choose your project (pages 6-7)
- Work with us to select a place to explore and study
- We will custom design a scientific inquiry program just for you!

VERNAL POND SCIENTISTS

Focus Area: Ponds and Wetlands

Question: How do animals use vernal ponds during their lives?

Core Concepts: Habitat dependence, migration patterns, life cycles

What We Do: Visit a local vernal pond - take water samples - collect and sketch animals breeding in the pond - follow migration routes into the surrounding uplands - discuss how people can protect this habitat.

FOREST ECOLOGISTS

Focus Area: Forests and Meadows

Question: What kind of plants and animals does the land support?

Core Concepts: Specialized habitats, species fit, diet and habitat

What We Do: Research a local animal species - visit a nearby woodland or meadow - seek out a compatible habitat for the animal - search for clues indicating the animal could inhabit that place - think about ways in which the animal and place are connected.



WATERWAY TRACKERS

Focus Area: Rivers and Streams

Question: How does water respond to and shape the life around it?

Core Concepts: Watershed, water cycle, water quality, life of a river

What We Do: Visit different upstream and downstream locations of a local river or creek - compare physical and biological indicators at each location - explore the relationship between animals, humans and water.

TIDELINE EXPLORERS

Focus Area: Beaches and Marshes

Question: How do the tides affect the shoreline and its creatures?

Core Concepts: Tides, intertidal zones, erosion, adaptation

What We Do: Visit several spots along a local stretch of coastline - delineate the tide lines at different points in time - measure the rate of tidal change - collect data about the sediments and animals found at each - compare survival strategies of different animals in each tidal zone.

CLIMATE INVESTIGATORS

Focus Area: Weather and Climate

Question: What influences climate and how does climate impact life?

Core Concepts: Biotic and abiotic factors, microhabitat

What We Do: Explore several outdoor field sites - document temperature, wind, water accumulation, sun exposure and surface geology - compare established plant and animal life at each site - investigate the relationship between habitat, weather and climate.



Choose Your Science Adventure

ECOSYSTEM ADVENTURES

Focus Area: Woods or Wetlands

Question: How do living and non living things all impact each other?

Core Concepts: Interconnections, human impact, predator and prey, populations, living and non living factors

What we Do: Identify living things - Record non living factors - search for relationships - figure out what pressures there are - assess human impact



Choose Your Project

THE ART OF SCIENCE

At Kestrel we take a project-based approach to education because we believe knowledge is forged through the act of creating something new. Pair a project with a program to create a truly unique experience.

MAPMAKING

Create a layered ecological map depicting the geological, biological, meteorological and human forces that have shaped and continue to shape the local landscape.

FIELD GUIDE DESIGN

Develop a field guide cataloging and classifying local plants and animals living in a particular place or habitat through written descriptions, detailed drawings and/or photography.

STORYTELLING

Create a written, oral or live action story chronicling our adventures together. Put a unique ecological twist on familiar storytelling devices like setting, plot, character, conflict, resolution and theme.

JOURNALING

Record a personal history of your program experience through written accounts, drawings, diagrams, photographs, quotes, graphs, charts, tables and more.





3-D MODELS

Conceive and craft three-dimensional models illustrating the flow, movement and/or form of a complex natural system.

ECOSYSTEM FILMS

Shoot, edit and screen documentary nature films capturing the essence of a place through the dramatic stories unfolding across that landscape.

BUILD YOUR OWN PROJECT

Work with our staff to design a customized project that fits with your needs.



Program Pricing & Discounts

If your school is unable to pay for a program, please contact our office to discuss alternative funding options. We are committed to finding a program structure and a corresponding price point that works for you.

\$125
CLASSROOM SESSION
up to 90 minutes

\$175
FIELD SESSION
up to 3 hours

\$350
ALL DAY ADVENTURE
up to 6 hours



Series Program/Custom Length Program-
Contact us for pricing

Prices are per class - 30 student maximum. No combined classes, please.
Curriculum development and materials are included.

DISCOUNTS

Membership 10% off the total program cost

Education Consulting: Real World Learning

Overview:

Would you love to engage your students in real world science and interdisciplinary learning? Our experienced, professional educators will design a teacher workshop or a curriculum to suit your needs. We can help you use NGSS inquiry skills and place-based learning in your classroom, incorporate local natural history content, and use constructivist teaching methods. Everything is custom designed for you, your goals, and your place.

You can expect to:

- Increase student achievement and interest in science
- Teach science the way scientists conduct research
- Use the world around you to teach content and skills
- Seek real answers to real problems
- Deepen connections to place and local natural history
- Apply local content to global understanding
- Connect science to other core areas for interdisciplinary projects
- Link to the Massachusetts STE Curriculum Frameworks and the NGSS



Choose from:

- Local Natural History Content Training
- Inquiry Science and Constructivist Teaching Training
- Place-based, Project Based, or Service Learning Unit support
- Custom Curriculum Design

For more information and pricing visit: www.kestreleducation.org/consulting/

Membership & More

Membership Gear Program

Get Outside Kits are full of durable, high-quality equipment your students can use and enjoy in the field.

What you get:

- Scientific exploration equipment (nets, magnifiers, GPS, etc)
- Bogs Boots to get muddy!
- Access to field guides, kids books, and over 100 other outdoor books
- For more information visit:
www.kestreleducation.org/get-outside-kits
www.kestreleducation.org/loan-program



Individual | \$25 (per year)

- Discounts on most programs for members
- Borrow boots and books
- Individual teachers qualify for free access to our Get Outside Kits



Friends & Family | \$45 (per year)

- Everything included as an Individual Plus Free rental of the Get Outside Center
- Discounts on most family programs
- Borrow boots and books
- Teachers qualify for free access to our Get Outside Kits

School | \$100 (per year)

- Free access to Get Outside Kits for whole school
- Discounts on most school programs
- Covers every teacher at your school

Booking & Contact Info.

Kestrel is open year-round. Contact us anytime for any reason. In general we book out one season in advance; we schedule fall programs in early summer and spring programs in early winter.

CONTACT INFORMATION

Website: www.kestreleducation.org

Jessica Kagle
Founder & Program Director

OFFICE 978-515-7177
CELL 617-290-2258
E-MAIL jessica@kestreleducation.org

MAILING ADDRESS

Kestrel Educational Adventures
186 Main Street Unit A2
Gloucester, MA 01930



"The first thing we need to do is create comprehensive place-based education programs that connect children and curriculum to the nearby natural world. Keep in mind that much of the available research suggests a very strong link behind childhood nature experience and adult environmental behavior. Without that deep, abiding sense of comfort in and love for the natural world, no amount of chastising about turning off the lights or biking to school is going to make a bit of difference."

-David Sobel, author of *Childhood and Nature*





Our mission is to inspire wonder, understanding and connection to the natural world through playful, outdoor, scientific inquiry.
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