Since 1997, Roaring Fork Conservancy has taught students about the precious resource that unites our valley — water. Watershed education programs are available to school, youth and civic groups year round. All our programs incorporate inquiry learning, hands-on activities, and relevant place-based content for students in the Roaring Fork Valley. Our programs are taught at your school classrooms, field locations throughout the Roaring Fork Valley, and at the River Center located in Basalt, Colorado.

STANDARDS
All programs are correlated to the Colorado Academic 2020 Standards, Next Generation Science Standards, and North American Association of Environmental Education Standards. We strive to help teachers meet curriculum needs.

OUR VISION
Our vision is that students in the Roaring Fork Valley and beyond, will gain a connection to our watershed. Through hands-on experiences, students will learn about their rivers creating value and awareness through exploration.

GENERAL INFORMATION
Since 1996, Roaring Fork Conservancy has inspired people to explore, value, and protect the Roaring Fork Watershed. We bring people together to protect our rivers and work hard to keep water in local streams, monitor water quality, and preserve riparian habitat. As one of the largest watershed organizations in Colorado, Roaring Fork Conservancy serves residents and visitors throughout the Roaring Fork Valley through school and community-based Watershed Education programs and Watershed Science and Policy Projects including regional watershed planning, water resource policy initiatives, stream management, and restoration.

FOR ADDITIONAL PROGRAMS, DATES AND REGISTRATION, PLEASE VISIT WWW.ROARINGFORK.ORG
Fishing in Schools • Teacher Education Workshops
Watershed Adult and Family Explorations • The Brooksher Watershed Institute
**Organizing a program with RFC**

- Email info@roaringfork.org to request dates for programming.
- Complete a Program Request form found on our website under School Programs or by email request.
- Select your program (see pages 4-7 for programs listed by standards and grade levels).
- Invoice payment and confirmation call.
- Send home parent letter and liability waivers (for programs located outside of school or River Center).
- Collect medical and liability waivers from parents for field programs.
- 2 days before program, review what students should bring (review how to dress on page 3).
- Prior to your arrival, give students access to RFC Intro video and a fun online activity.
- Print student journals (if needed).
- Enjoy an action packed learning experience with your students!

**PRE-TRIP LOGISTICS**

A logistics email will be sent to you prior to the field trip that will include waivers, letter home to parents, online extension activities, daily program schedule, and logistics for the students.

**ROLE OF THE TEACHER DURING RFC PROGRAMMING**

We want to give your student the best possible experience. Our educators need to be focused on delivering content, creating playful experiences, and safety. Educators do not have in-depth knowledge of specific student’s needs, so teachers need to be responsible for redirecting disruptive behavior.

**ONLINE PROGRAMMING OPTIONS**

- Subjects include investigations on: macroinvertebrates, trout, riparian plants, ecology survey, erosion and interactive watershed maps.
- Students will learn how to observe, journal, and create scientific illustrations.
- We also offer interactive activities using local watershed data and issues.

**SAMPLE SCHEDULE FOR FULL-DAY PROGRAM**

Morning Session at the River Center

- Group 1
- Group 2
- If there are more sections, teachers can contact Basalt Library or the Art Base for programs or plan independent time.

Lunch (Outside classroom or near Old Pond Park) In-classroom option during inclement weather.

Afternoon Session at the River Center

- Group 3 & 4
- Group 1 and 2 (independent time)

**CLASSES INCLUDED IN SERIES**

(Series programs can be customized)

- Dee Dee the Fryingpan River Dipper
- Watery World
- Busy Beavers
- Captain Cutthroat (Trout)
- Riparian Bats
- Macroinvertebrates, Aquatic Insects
- Riparian Birding Olympics and Adaptations
- Augmented Reality Sand Table: Creating and Seeing Watersheds
- Water History Trunk
- Geomorphology: A field study
- Augmented Reality Sand Table: Mapping how water flows
- Enviroscape: Modeling a community’s impact on water
- Macroinvertebrates: Water Quality Indicators
- Storm Drain Hunts: Nonpoint sources of pollution
- Riparian Ecology Survey
- Water Chemistry and Snow Science
- Augmented Reality Sand Table: Water use and storage
- Interactive virtual watershed map
- Snow Science
- Water in the West
- Plumbing the Colorados: Where does the water go?

**PROGRAM NAME AND AGE GROUP**

K-2

- K-2
- Friepond river Dipper

WINTER

- Long sleeve shirt
- Fleece mid-layer
- Insulated winter jacket
- Long underwear
- Insulated snow pants
- Hiking boots or sturdy walking shoes (preferably waterproof)
- Winter hat
- Winter gloves (thick, not thin)
- Wool or warm socks

**SPRING**

- Long sleeve shirt
- Shorts or pants
- Hiking boots or sturdy walking shoes (preferably waterproof)
- Waterproof rain jacket or poncho
- Wool or warm socks
- Sunglasses

**SUMMER**

- T-shirt
- Hiking shorts or pants
- Hiking shoes or tennis shoes
- Hat
- Sunglasses
- Sunscreen

**FALL**

- Long sleeve shirt
- Shorts or pants
- Hiking boots or sturdy walking shoes
- Waterproof rain jacket or poncho
- Wool or warm socks
- Warm hat
- Gloves (if needed)
- Sunglasses
## Watershed Education

### ELEMENTARY SCHOOL

<table>
<thead>
<tr>
<th>RFC Lesson</th>
<th>Program Description</th>
<th>Learning Target/Standard</th>
</tr>
</thead>
</table>
| Erosion In Action - Stream Trailer | Get your hands wet creating rivers and watching geomorphology happen in a working stream trailer. Available May through October. | - Students use models to understand erosion and human impacts  
- Earth’s surface changes constantly through a variety of processes and forces |
| Macroinvertebrates                 | Explore and identify real aquatic river insects using identification guides and microscopes. | - Organisms have structures with different functions  
- Classification, interaction and interdependence  
- Interaction between living and nonliving  
- Life cycle and habitat |
| Busy Beavers                      | Learn all about beavers through storytelling, anatomy models and exploration of beaver signs and activity. | - Organisms have structures with different functions  
- Classification, interaction and interdependence  
- Interaction between living and nonliving  
- Life cycle and habitat |
| Riparian Food Chains               | Become part of the food chain and learn about energy transfer in ecosystems.          | - Classification  
- Interaction  
- Interdependence |
| Trout, Trout, Trout!              | Enjoy a visit from Captain Cutthroat and learn about trout anatomy and habitat needs. | - Organisms depend on their habitat’s nonliving parts to satisfy their needs  
- Adaptations |
| Dee Dee the Fryingpan River Dipper | Learn all about our favorite aquatic song bird through storytelling, dress up, and habitat exploration. | - All living things share similar characteristics  
- Living things also have differences that can be described and classified |
| Riparian Bird Olympics             | Compete in games using the adaptations of birds while exploring their habitat.         | - All living things share similar characteristics  
- Living things also have differences that can be described and classified |
| Art & Science of Birds or Bats     | Enjoy playing games using art to learn about bird/bat anatomy and habitat needs.       | - All living things share similar characteristics  
- Living things also have differences that can be described and classified |

**PLEASE NOTE:** All Programs can be adapted to different grade levels and different seasons – just ask!

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<table>
<thead>
<tr>
<th>RFC Lesson</th>
<th>Program Description</th>
<th>Learning Target/Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weather Stations</td>
<td>Become a weather scientist by creating hypotheses and testing them with weather instruments.</td>
<td>- Weather changes are measured by differences in temperature, air pressure, wind and water in the atmosphere and type of precipitation</td>
</tr>
</tbody>
</table>
| Water Cycle Game                  | Become a drop of water and roll the dice to find out where you will land.             | - Matter exists in different states such as solids, liquids, and gases  
- Matter can change from one state to another by heating and cooling |
| Watery World                      | Explore the properties and states of water through hands on activities and stories.     | - Solids and liquids have unique properties that distinguish them |
| Water History                     | Explore real artifacts from Colorado History while learning about how water shaped our past. | - Colorado History |
| Augmented Reality Sand Table       | Use and create maps to understand earth systems and renewable resources. Play with an Augmented Reality Sand Table to learn about water and geology! | - Earth and sun provide a diversity of renewable and non-renewable resources  
- Earth’s surface changes constantly through a variety of processes and forces |
| Life Zones                        | Use beautiful illustrations and activity guides to learn about the life zones in Colorado. | - Use geographic tools to research and answer questions  
- Connect across human and physical systems |
| Snow Science                      | Geology and Nature of Science                                                        | - Earth’s surface processes interact  
- Solids liquids and Gas |
| Terrific Trees                    | Ecology and Life Science                                                              | - Internal and external structures of plants  
- Obtain and use energy  
- Healthy ecosystems |
| Sum of the Parts                  | Science, Social Studies and Art                                                      | - Human impact on our environment |

**PLEASE NOTE:** All Programs can be adapted to different grade levels and different seasons – just ask!
## Watershed Education
### MIDDLE AND HIGH SCHOOL

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Main Subject</th>
<th>2020 Standards &amp; Main Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macroinvertebrates: Indicators of Water Quality</td>
<td>Biology</td>
<td>• Population Dynamics&lt;br&gt;• Environmental interactions&lt;br&gt;• Biological components of stream health&lt;br&gt;• Dichotomous keys</td>
</tr>
<tr>
<td>(Aquatic Insects)&lt;br&gt;Classroom, River Center, or Field Trip</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cutthroat Trout Native Species &amp; Local Adaptations</td>
<td>Biology</td>
<td>• Anatomy&lt;br&gt;• Genetics&lt;br&gt;• Ecosystems are dynamic in nature, characteristics can vary over time&lt;br&gt;• Disruptions to any physical or biological component of an ecosystem can lead to shifts in all of its populations</td>
</tr>
<tr>
<td>Classroom, River Center, or Field Trip</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetlands and Riparian Ecology</td>
<td>Ecology</td>
<td>• Biotic and abiotic factors&lt;br&gt;• Living and nonliving interactions&lt;br&gt;• Food chain and energy transfer</td>
</tr>
<tr>
<td>Field Trip, River Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>River Ecology</td>
<td>Ecology</td>
<td>• Abiotic and biotic factors&lt;br&gt;• Understanding how human activities and the Earth’s surface processes interact</td>
</tr>
<tr>
<td>Raftering, Field Trip</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Quality</td>
<td>Chemistry</td>
<td>• Molecules and reactions&lt;br&gt;• Understanding how human activities and the earth’s surface processes interact&lt;br&gt;• Chemical and physical indicators of stream health</td>
</tr>
<tr>
<td>Field Trip, River Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science Through Art</td>
<td>Art, Biology</td>
<td>• Drawing from life&lt;br&gt;• Rendering scientific macroinvertebrate illustrations&lt;br&gt;• Observation of living systems</td>
</tr>
<tr>
<td>Classroom, River Center, or Field Trip</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plumbing the Colorado</td>
<td>Social Studies</td>
<td>• Geographic tools&lt;br&gt;• Role of consumers&lt;br&gt;• Inferences and predictions&lt;br&gt;• Consumption of resources&lt;br&gt;• Western development and expansion</td>
</tr>
<tr>
<td>Classroom or River Center</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PLEASE NOTE: Our programs can be adapted to different grade levels and different seasons – just ask!

### Watershed Education
### MIDDLE AND HIGH SCHOOL

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<thead>
<tr>
<th>Program Name</th>
<th>Main Subject</th>
<th>2020 Standards &amp; Main Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Manager</td>
<td>Social Studies</td>
<td>• Role of consumers&lt;br&gt;• Resource use and consumption</td>
</tr>
<tr>
<td>Classroom, River Center, or Field Trip</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water in the West</td>
<td>Social Studies</td>
<td>• Economic Systems&lt;br&gt;• Water law and history&lt;br&gt;• Reservoirs &amp; Dams</td>
</tr>
<tr>
<td>Classroom or River Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Snow Science</td>
<td>Geology, Chemistry, Nature of Science</td>
<td>• Digital information as wave pulses&lt;br&gt;• Volume&lt;br&gt;• Density</td>
</tr>
<tr>
<td>Field Trip (Classroom if deep snow nearby)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stream Trailer &amp; Groundwater</td>
<td>Geology</td>
<td>• Earth systems&lt;br&gt;• Mapping&lt;br&gt;• History&lt;br&gt;• Natural hazards&lt;br&gt;• Geological forces</td>
</tr>
<tr>
<td>Interactive Model&lt;br&gt;Classroom or River Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weather, Climate &amp; Surface Water</td>
<td>Earth Science</td>
<td>• Water Cycles&lt;br&gt;• Water Movement</td>
</tr>
<tr>
<td>Classroom, River Center, or Field Trip</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enviroscape: Non-Point Source Pollution</td>
<td>Earth Science</td>
<td>• Humans’ dependency and impact on the environment</td>
</tr>
<tr>
<td>Classroom or River Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Augmented Reality Sand Table: Understanding Watersheds and Maps</td>
<td>Geology and Social Studies</td>
<td>• Earth systems&lt;br&gt;• Mapping&lt;br&gt;• Geological forces&lt;br&gt;• Role of consumers</td>
</tr>
<tr>
<td>Geomorphology and Land Use</td>
<td>Geology and Social Studies</td>
<td>• Characteristics of places and regions and human interactions&lt;br&gt;• Best management practices&lt;br&gt;• Earth systems and processes, erosion and weathering</td>
</tr>
</tbody>
</table>

PLEASE NOTE: Our programs can be adapted to different grade levels and different seasons – just ask!
Roaring Fork Conservancy Water Education Programs by Grade

Pre-K
- Dee Dee the Fryingpan River
- Water Cycle

K
- Water Conservation
- Snow Science
- Water Quality

1st
- Colorado Water History
- Watershed Maps
- Erosion Stream Trailer

2nd
- Life Zones
- Human Watershed
- Geomorphology at Coal Basin

3rd
- Water Quality
- Water in the West
- Weather

4th
- ELD Snow Science & Stream Trailer
- Capstone Project
- Service Learning

5th
- Geomorphology at Coal Basin
- Water Quality
- River Ecology
- Ground Water

Middle School
- Mapping & Creating Watersheds
- Water Quality
- Enviroscape
- Watershed Manager

High School
- Water in the West
- ELD Snow Science & Stream Trailer
- Internships

College
- Geomorphology at Coal Basin
- Water Quality
- Research Projects

Introduction to Watershed Science: Augmented Reality Sand Table
- Busy Beavers
- Trout, Trout, Trout!

Science Through Art: The Study of Riparian Animals
- Macromammals: Indicators of Water Quality
- Macromammals: The Study of Riparian Animals

Macromammals: Indicators of Water Quality

Fly Fishing
- Ruedi Reservoir
- Terrific Trees

River Center or School

Class Location Flexible

Outdoor Field Trip

Many RFC programs can be adapted for different grade levels or core subjects. Please contact RFC’s education staff if you are interested in custom water education programs.

Visit our website
www.roaringfork.org