

RiverQuest Sustainability Education Programs

RiverQuest employs a comprehensive suite of formal and informal education programs to address central issues of **environmental sustainability** at local and global levels. Programs examine relationships among human populations, natural/environmental resources, energy, industry, and economy. A range of programs are offered that share this central focus: teacher workshops, in-school student sessions, onboard river-based learning experiences, programs for the public, and future distance-learning systems all fall under this umbrella of programs.

RiverQuest programs explore many examples of human impacts on natural environments. A local example may focus on the links between watershed management, land use policy and development, and downstream flooding. A global example may consider the effects of population growth and economic development and how they may impact resource availability and environmental health. These concepts integrate mathematical modeling and analysis, based on the grade level of the students involved.

Explorer is the centerpiece of RiverQuest programs. The world's first green boat built expressly for education, *Explorer* serves up to 90 students in a school program and up to 120 people in public programs and educational charters. The boat will hold a maximum of 149 passengers at any given time. The vessel includes an innovated hybrid diesel-electric propulsion system that could be fueled with a biodiesel mixture to help reduce emissions. The system is designed to incorporate other energy sources in the future as well. It includes many environmentally friendly features, from windows and lighting to construction materials and daily operations that meet LEED (Leadership in Energy and Environmental Design) green building interior standards.

The ongoing integration of practical and useful technology into the hands-on program is an ongoing organizational goal. GPS technology is integrated into the sampling done onboard to add to the veracity of student data. A fully functional scientific database will hold and manage data so that students and teachers can access and manipulate the data in practical and useful ways.

RiverQuest education programs address Pennsylvania Academic Standards in various areas and disciplines, including but not restricted to Science and Technology, Physical Sciences, Environment and Ecology, Mathematics, Economics, and more. Program content is various programs offered can be adapted for grade levels ranging from K-16, depending upon the program. A sequential set of offerings is in the process of assembly, so that elementary, middle school, and high school programs are successive and build one upon the last.

More information about K-16 programs is available by calling 412-231-2712.