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Opportunity's Legacy: The Mars Rover Celebration Curriculum

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Abstract

The Mars Rover Celebration (MRC) is a unique collaboration between NASA and the University of Houston Departments of Physics and Psychology that provides a STEAM (Science, Technology, Engineering, Arts, Math) curriculum to foster students in elementary and middle school to work collaboratively, apply critical thinking skills and use problem-solving skills to solve authentic problems. It is part of the legacy of the Mars Exploration Rover (MER) mission: Opportunity.

The MRC curriculum contains a total of 30 lessons to be taught over a period of six weeks. Lessons are divided into an elementary track (grades 3-5) and a middle school track (grades 6-8) and work largely in parallel thus allowing the instructor to select lessons most appropriate for students. During the project, students work in teams to learn about the solar system, research Mars and ultimately plan their own mission to Mars by designing and building a model rover that will carry out that specific mission.

Regardless of track, lessons are aligned to standards and contain focused literacy components as well as science notebook pages. These tools work together to helps students learn and/or practice key literacy skills that will help them carry out their specific missions to Mars. Along with building vocabulary to develop and improve background knowledge, students hone research skills.

After participating in the MRC curriculum, students are invited to the University of Houston to interact with real-life scientists who critique their work, ask them questions about their Mars Rover and generate excitement about STEM careers.