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BAT T.E.A.M.
January 30, 2005

Proposal to Acquire “The Great Solar System Rescue”

The “Great Solar System Rescue” is an interactive software package with supporting classroom materials designed for use in the 5th through 8th grades. The Great Solar System Rescue (GSSR) is designed to engage students in research skills and critical thinking as they role-play a mission to discover the location of a lost space probe somewhere within our solar system and then problem-solve the best method to retrieve the disabled space probe. GSSR encourages students to be active learners by giving an imaginative context of a space mission complete with narration and animations, in which the students are unique “experts” brought on the mission, just as they would be experts of their chosen field in a real-life situation. As I shall explain in further detail, because of the ways in which GSSR engages students in their own learning and gives a context to apply lessons in science, I believe GSSR would be a valuable investment as an addition to our school’s educational materials.

As stated in *How People Learn: Brain, Mind, Experience, and School*: “In the early part of the twentieth century....it was not the general rule for educational systems to train people to think and read critically, to express themselves clearly and persuasively, to solve complex problems in science and mathematics. Now, at the end of the century, these aspects of high literacy are required of almost everyone in order to successfully negotiate the complexities of contemporary life,” (Branford, Brown, & Cocking, 1999). In order to prepare our own students to be successful, we need to foster in our students the abilities to think critically, persuasively express themselves, and solve problems. GSSR stimulates those very abilities as critical

thinking is necessary for the students to look at all the facts given to them about the planets, use the “clues” provided to them by the probe’s last transmission, and then chose the planet where the probe was lost. As each student in a team is given a unique role as astronomer, geologist, historian, or meteorologist, he or she is then responsible for presenting their conclusions to their team members in a logical and persuasive fashion for the team as a whole to decide where to send their rescue mission. In the second half of the exercise, students must choose among four differently designed rescue landers to enter into the conditions of the planet and recover and repair the probe. Again, students must problem-solve by reviewing the facts and body of knowledge provided to them about the planet conditions and the specifications of the unique rescue landers and then applying it to the selection of a lander. Once selected, the students are treated to an animated landing sequence that shows them the success or the failure of their lander selection and *why* there was success or failure.

“The new science of learning does not deny that facts are important for thinking and problem solving. Research...demonstrate[s] that experts' abilities to think and solve problems depend strongly on a rich body of knowledge about subject matter” (Branford, Brown, & Cocking, 1999). In GSSR, the emphasis on research and application rather than memorization occurs when the facts about the planets are available to the students in helpful reference guides that represent the “rich body of knowledge” that an expert has at his command. The GSSR materials also include suggestions for follow-up lessons that teachers can use to expand their curriculum and connect back to the rescue mission, grounding such lessons in a context for their students. As the design of the “Great Solar System Rescue” incorporates the latest research in student learning to foster problem-solving and research skills, I believe our school should make GSSR a priority to bring to our science classrooms.