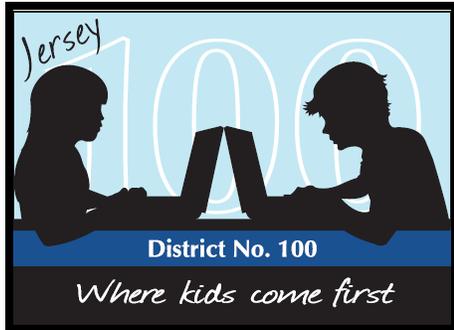# Going Digital: The Integration of Technology and STEM Education

Over the summer in 2012, the Jersey 100 family worked diligently to prepare for the conversion from traditional learning to innovative-global exploration. We are preparing OUR students for the 21st century in ways that will engage them in our community and world by giving them the opportunity to examine ideas more critically, speak with confidence and poise, and model best practices of learning by delving into content for deeper understanding. This is occurring at every level – Pre-K through the twelfth grade.

Going One to One at the middle and high school levels and providing multiple opportunities to enhance primary and intermediate students' skills in digital competencies have placed ALL students and teachers above their peers and colleagues respectively. Our students are immersed in an environment of learning where exploration and research occurs every day and critical thinking is enhanced along the way. The computer and technology tools are simply the tools our students and teachers use to access information, resources, and curricula. Students are thinking deeper and developing advanced skills in technology. Integrating them both together is the change that puts Jersey 100 students above the bar.

Integration of technology also provides opportunities to enhance the learning processes relating to Science, Technology, Engineering, and Mathematics (STEM).

- Students, through digitized project-based learning opportunities, will create experiences, analyze problems, and examine questions in Science, Technology, Engineering, and Mathematics (STEM) to promote engagement and excitement of learning in the middle grades.
- Students will enhance their learning processes by participating in hands-on activities that promote critical thinking skills. The pedagogical design will be project-based in which students will attempt to conceptualize science terms in ways that allow students to hypothesize and generalize, as well as propose solutions to problems that affect the environment or natural earthly elements.
- Teachers and students will integrate technology into their instruction and learning respectively, experimenting on innovative ways to change the way we think and respond to issues.
- Through digital communication venues, students will collaborate with students from various parts of the nation about science, technology, engineering, and mathematics, participating in projects that bring both rural and urban communities together.

Engaging students in positive, hands-on experiences in math and science will open their eyes to post-secondary opportunities. Providing instruction that is exciting and engaging, promoting skills and processes that enhance the middle grade student in project based digital learning will help encourage and build 21st century learners. In turn, we will be building science and math proficient citizens.

By moving to a digital curriculum it will afford "every" population more universal and opportunistic instruction. Our hope is that someday every child, whether by portable lab or individual devices, will be provided a technological device that they have access to 24/7. Our distribution of computer laptops will occur over the summer – 2013. Training for teachers has been underway for one year. Teachers participate in research regarding benefits digital one-to-one learning opportunities. Student attendance increases, ownership of learning is enriched, students discipline is improved and suspensions decline. The Soaring in Science: Learning for Life affords "every" student to have access to learning in way that "every" child deserves. Additionally, resources in the classroom that connect learners from one state to another, sharing findings, problem-solving, and evaluating in collaborative ways increase ways in which students learn best. Engaging in science-based, technology-rich programs that enhance skills in engineering and mathematics will assist in building our nation by getting students excited about innovative agricultural experiences in the United States and perhaps beyond.

Students: Soaring in Science: Learning for Life is a program that will provide student exposure to digitized learning in the area of science, agriculture, mathematics, and writing. Project-based learning activities focused on STEM: Science, Technology, Engineering, and Mathematics will be the emphasis.

Students will collaborate by participating in a research design study in which they propose a hypothesis and design a study that will require students to work together to find an answer. They will create a research question, followed by making hypotheses. Students will engage in a project based learning activity that promotes investigation and exploration. Through questioning and research, students will gain understanding of both descriptive and inferential statistics. Additionally, setting up a research problem, and identifying steps to follow will be necessary. Through research, students will illustrate finding through the use of advanced innovative tools that students must manipulate to present results.

In addition to student learning activities, teachers will engage in professional development activities aimed at promoting 21st century pedagogy, featuring problem-based learning

and STEM: Science, Technology, Engineering, and Mathematics instruction. Advanced technology integration practices and use of tools will be the focus of school improvement initiatives. Community members well-versed in technology and tools from the business and agricultural professions will be featured at after school training sessions to help parallel instruction, lesson design, technology integration, and connectivity to real world activities.

Technology integration can enhance every content area: fine arts, business, physical education, and the list continues. The emphasis on learning will derive from student experiences with the teacher facilitating the process. Thus, GOING DIGITAL will place our students above the bar, preparing them for post-secondary success in college or career.