

The Curriculum Corner

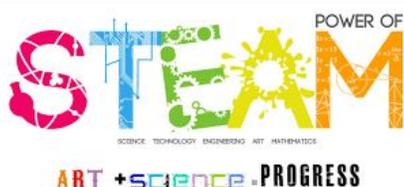
North Brunswick Township Schools Monthly Curricular Update



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STEAM Education in NBTSchools



On its surface, "STEAM" is the acronym of science, technology, engineering, arts, and mathematics. However, when you pull that first layer away, you reveal it is about moving forward, solving problems, learning, and pushing innovation to the next level. In North Brunswick, we are striving to infuse STEAM education at all levels. At the elementary level, we incorporate most of our STEAM activities through extracurricular clubs and enrichment programs. Opportunities such as robotics, coding, and makerspaces allow students to be innovative and creative.

Linwood is a recognized leader in middle school STEAM, and has offered an interdisciplinary approach to engineering and design for several years. This summer, a team of art, science, music and technology teachers continued their training at Stevens Institute. It is our goal to offer STEAM to all students at Linwood and to increase the number of teachers trained, which will ultimately increase students' opportunity to participate. Recently, STEAM students showcased their work at a "gallery opening" in culmination of a design project. For this challenge, students followed the design process to develop an innovative and functional table design. Students researched structure and materials, as well as calculated costs, and identified appropriate retail outlets. Finally, students learned to draw their design using perspective in a three-dimensional space. The incredible variety of table designs truly underscored the divergent thinking that the arts bring to academics.

STEAM education at NBTHS is most apparent through our engineering courses:

Introduction to Engineering Design
Principles of Engineering
Computer Integrated Manufacturing
Computer Science and Software Engineering

At the high school level, many of our core content classes are beginning to incorporate problem solving through authentic experimental design. This process leads to the artistic and manufacturing design process of a product while keeping in mind environmental and personal safety, costs, and appeal to consumers.

Autism Program- Parent Academies

The staff of the Autism Programs at Judd Elementary School, NBTECC and Linwood provided an evening of Parent Training sessions specifically designed to meet the needs of parents in the Applied Behavior Analysis (ABA) programs in the district. Parents completed a training survey, which was then used to design the training session topics. Seven training sessions were provided in two time slots. Parents were able to attend two sessions of their choice by pre-registering. Child Care was provided by trained school staff and supported by high school volunteers for approximately 30 children. Most parents indicated that the reason they attend this Parent Academy is that they feel confident in the child care provided. The well-trained support staff who provide quality child care for the parents who have often shared the challenges they experience with child care.

The incredible turnout at these events demonstrates the need of our families to receive assistance with the challenges in the home in the areas of behavior, language, and daily living skills.

Assessment Updates

NJASK Science - Grades 4 & 8
NJBCT - High School

The dates for the The New Jersey Assessment of Skills and Knowledge (NJASK) - Science Grades 4 & 8 & New Jersey Biology Competency Test are listed below and can also be found on our district website.

5/25/16 - 5/26/2016 NJBCT Science
6/1/16 - 6/2/16 NJBCT Sci (**Make-Ups**)

5/25/16 NJASK Science Grades 4 & 8
6/1/16 NJASK Sci Gr. 4 & 8 (**Make-Ups**)

Additional information about the NJASK Science & NJBCT can be found at <https://www.measinc.com/nj/Default.aspx>

Technology Tidbit



We are gearing up for Computer Science Education week (December 7-13)! Code.org is encouraging learners of all levels to try an "hour of code". Below are some other sites and apps that your child can use to learn about computer science at home:

Websites:

[Khan Academy-Intro to JavaScript](#)
[CodeHS](#)
[CodeAcademy](#)
[CodeCombat](#)
[CodeAvengers](#)

Apps:

[Lightbot](#)
[Kodable](#)
[Tynker](#)

In the Schools...

Elementary

Mike Palazzo

K-5 Science Supervisor

The NBT Schools elementary science curriculum builds upon our students' innate curiosity about the world around them. Their enthusiasm can be seen at all grade levels as they Investigate Water (K), learn about the Sun, Moon and Stars (1,4), observe the life cycles of plants and animals (2,3,5), design and build circuits, submersibles or lighting systems (2,4,5), observe chemical reactions (3,5), learn about the human body (1,4) or examine the properties of Earth materials (2,3). We hope they will share their experiences with you. That they will ask you to come outside to watch for the International Space Station to fly overhead at sunset, tell you what the ants in their classroom ant farm did this week or explain how a flashlight works.

Middle

Jeannine Lanphear

6-8 Science Supervisor

The science teachers in grades six through eight have been working on several initiatives: reading and writing in science, using models to help students understand difficult concepts; and preparing for the implementation of the new Next Generation Science Standards by piloting new instructional resources.

We were fortunate to have two additional Chromebook carts dedicated for the science department at Linwood this year. This increased availability of technology has enabled teachers to integrate more opportunities for the use of technology in instruction. Students have been using spreadsheets to collect data and word processing to develop their skills with evidence-based scientific writing. Teachers are using Google Classroom to support student learning, and are developing their own applications and games to check student understanding. We hope to continue to increase technology resources in the science classrooms.

Also new this year, we are piloting a new science program at Linwood for advanced 8th grade science students. This Progressive Science Initiative program has been implemented at the high school, and now students have the opportunity to

take Algebra-based Physics, a science course provided to 9th graders at the high school, at Linwood. This allows students to pair instruction in Algebra I and Physics I courses to more closely complement and support each other. Otherwise, advanced math and science students would experience these topics further apart in their sequence of courses. Thus, students who are enrolled in the Honors Physics course at Linwood must simultaneously take, or have already taken Honors Algebra I. This is feasible as many topics overlap in the Science 8 curriculum. The approach to the topic in Physics is more mathematical than in the Science 8 class. It has been exciting to see the students rise to the challenge. Already this year, there has been tremendous student growth in topics in Physics as students have collaborated to run labs, collect data, analyze phenomenon, and transfer learning to solve problems.

The Linwood Science department will be showcasing student work at the Board Office for the month of December and welcome all to see what our students have already accomplished this year.

High

Andrea LaMagra

NBTHS Science Supervisor

Exciting things are happening for the Science Department at North Brunswick Township High School. In the upcoming months, department leaders will be working together to finalize curriculum updates to integrate the Next Generation Science Standards (NGSS). The science department has already been hard at work with Professional Development hours dedicated to developing unit plans which incorporate more engineering practices and experimental design for our 21st century learners. With full implementation of NGSS taking place in the fall of 2016, teachers expect a much more holistic appreciation for the sciences to begin taking shape.

We are a department that takes great pride in our diverse backgrounds and consider ourselves a melting pot of all disciplines. We are always working to be the best at interdisciplinary activities and projects to bring education as a learning experience into the minds of our students at NBTHS. We open our curriculum to

the demands of other content areas while producing a core unique to science. This year, the Science Department has taken on a supportive role in the English and Math departments. Over the past couple of weeks, the science and math teachers have been meeting for professional development led by Mrs. Kari Aloisio and Mrs. Andrea LaMagra studying the core math standard practices. When appropriate, complementary science courses will be encouraging students to complete non-calculator computational skill for rational numbers. These classroom practices will increase the students' awareness and comfort level when facing this testing style in both PARCC and SAT settings. In addition, the science staff has also increased the number of informative writing responses through open-ended tasks, assessment questions, and even article reviews. Communication in science is key, and through the use of informative writing the ability to communicate accurately and succinctly is a necessary skill. By bridging English and the Sciences together, we hope to increase students' skills and expose them to various writing styles.

Student and Staff Spotlights

Congratulations to Kristen Park and Ryan Catalano for their achievements in the Siemens National Science, Math, and Technology Competition. Ryan moved on to represent NBTHS as a regional finalist, presenting his project to a panel of judges at Massachusetts Institute of Technology.



Thank you and congratulations to Mr. Weiss and Mr. Goldman for another successful Robotics Tournament – Brunswick Eruption 2015.

Dr. O'Reilly has also cemented her team for continued participation in the Waksman Student Scholars Program (WSSP). The WSSP provides opportunities for high school students to expand their skills in authentic research on molecular biology and bioinformatics.

