



GREAT NECK PUBLIC SCHOOLS

"Where Discovery Leads to Greatness"

#DiscoverGreatness

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Curriculum Profile: Technology 8

<u>Department</u>	Technology	
<u>Course Name</u>	Technology 8	
<u>Course Length</u>	Twenty weeks - every day	
<u>High School Credits</u>	N/A	
<u>Description</u>	Students are introduced to current technologies and study them in great detail in our STEMLABs. Modules include 3D printing, bridge design, orthographic perspective drawing, CAD, construction and building, alternative energy, transportation and more. Hands-on learning/problem solving includes building a magnetic levitation vehicle that needs to meet prescribed criteria and constraints; as well as designing and building a toothpick bridge that is crushed and an efficiency ratio is determined. Students will build several different types of circuits and then create an integrated electrical circuit/nightlight from scratch. Students are expected to develop an understanding of electricity, energy, communications, and transportation through several problem solving and decision-making activities. 3D designing is explored and a project is designed and printed using the 3D printer. This is a true STEM environment.	
<u>Target/eligible students</u>	Students in grade 8	
<u>State Learning Standards Link(s)</u>	http://www.nysed.gov/career-technical-education/technology-education-learning-standards	
<u>Primary texts and materials</u>	Circuit board material, resistors , light bulbs, etching acid, drawing unit drawings/test, electronic snap kits, various building materials.	
<u>Scope/Sequence</u>		
<u>Introduction to energy</u>	1. Students will have a more comprehensive and deeper introduction to energy, energy systems and what energy actually is. 2. kinetic/ potential - forms of energy 3. Alternative energy 4. Fossil fuel-based energy Generation of electricity	
<u>Safety</u>	New York State MST Standard 5 - 2 Tools Resources and technological process	Prior to working in the technology lab, students must go through a comprehensive safety unit. Safety rules are distributed, signed by legal guardians of the student, a safety video is viewed, and a safety test is taken.
<u>Night light project</u>	New York State MST standard 5- 1 Engineering Design	1. Students learn the various attributes of electrical energy , electron flow , conductors / insulators 2. Students will fabricate a circuit board from scratch. It will be placed in a resin-based material and become a night light 3. Students will do five electrical experiments using the ' snap kits'
<u>Drawing unit</u>	New York State MST standards - standard 5 - 6 Impacts of technology	1. Students learn about architectural drawing, why we use drawings, and various careers that utilize technical drawing 2. Students will practice hand drawing and learn about multiple perspective (Orthographic) drawing 3. Students will take 4 drawing tests a. Front view b. Top view c. Right Side view d. Hidden line .

<u>Bridge unit</u>	New York State MST Standards standard 5 - 1 engineering design	Students will use what they learned from the drawing unit to design and fabricate a toothpick bridge. The bridge will be built from toothpicks and wood glue. The goal is to build the bridge that can support the most weight in our bridge crusher. Students compete to see whose bridge will win. Many different topics are studied in this unit a. Materials b. Geometric shape strength c. Material connections d. tension/ compression e. load / excess force
Additional Notes		