

2017 NATIONAL SCIENCE OLYMPIAD – NEXT GENERATION SCIENCE STANDARDS ALIGNMENT

B (MIDDLE SCHOOL) DIVISION

B Events	Next Generation Science Standards
Anatomy – Understand the anatomy and physiology of human body systems.	From Molecules to Organisms: Structures and Processes (MS-LS1–3)
Bottle Rocket – Prior to the tournament, teams construct up to two rockets designed to stay aloft for the greatest amount of time while carrying a raw Grade A large chicken egg that survives impact.	Engineering Design (MS-ETS1–2-4) Science and Engineering Practices (2-6)
Crime Busters – Given a scenario, a collection of evidence, and possible suspects, students will perform a series of tests. The test results along with other evidence will be used to solve a crime.	Matter and Its Interactions (MS-PS1–2-3) Science and Engineering Practices (3-4, 8)
Disease Detectives – Students will use their investigative skills in the scientific study of disease, injury, health, and disability in populations or groups of people with a focus on food borne illness.	Engineering Design (MS-ETS1–2-3) Earth and Human Activity (MS-ESS3–4) Science and Engineering Practices (2)
Dynamic Planet – Teams will complete tasks related to plate tectonics.	Earth’s Systems (MS-ESS2–3, 6) Science and Engineering Practices (2, 4, 6)
Ecology – Students will answer questions involving content knowledge and process skills in the area of ecology and adaptations in North American biomes.	Ecosystems: Interactions, Energy, and Dynamics (MS-LS2–1-5; HS-LS2–1-8)
Experimental Design – This event will determine a team’s ability to design, conduct, and report the findings of an experiment actually conducted on site.	Science and Engineering Practices (1-8)
Fast Facts – Teams will match terms with a given letter to given science categories.	Science and Engineering Practices (8)
Food Science – Teams will study the chemistry of food and build a calorimeter to determine the energy content of solid food.	Science and Engineering Practices (3-8)
Hovercraft – Teams will construct a self-propelled air-levitated vehicle.	Science and Engineering Practices (2-6)
Invasive Species – This event will test student knowledge of invasive species in local and national ecosystems.	Biological Evolution: Unity and Diversity (HS-LS4–2) Earth and Human Activity (MS-ESS3–3)
Meteorology – This event emphasizes understanding severe storms.	Earth’s Systems (MS-ESS2–5) Earth and Human Activity (MS-ESS3–2)
Microbe Mission – Teams will answer questions, solve problems, and analyze data about microbes.	From Molecules to Organisms: Structures and Processes (MS-LS1–1, 6, 7; HS-LS1–1, 3, 4, 5, 6, 7)
Mission Possible – Prior to competition, competitors will design, build, test, and document a Rube Goldberg®-like device that completes a required task through an optional series of simple machines.	Energy (HS-PS3–3) Science and Engineering Practices (2-8)
Optics – Teams will direct a laser beam towards a target and be tested on their knowledge of geometric and physical optics.	Waves and their Applications in Technologies for Information Transfer (MS-PS4–1-3)
Reach for the Stars – Students will demonstrate an understanding of the properties and evolution of stars especially star forming regions and supernova remnants and their observation with different portions of the electromagnetic spectrum: Radio, Infrared, Visible, Ultraviolet, X-Ray and Gamma Ray.	Earth’s Place in the Universe (HS-ESS1–2-3)

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Road Scholar – Teams will answer interpretive questions that may use one or more state highway maps, USGS topographic maps, Internet-generated maps, a road atlas or satellite/aerial images.	Science and Engineering Practices (2)
Rocks and Minerals – Teams will demonstrate their knowledge of rocks and minerals.	Matter and Its Interactions (MS-PS1–1) Earth’s Systems (MS-ESS2–1; HS-ESS2–3)
Scrambler – Prior to the competition, competitors must design, build, and test one mechanical device, which uses the energy from a falling mass to transport an egg along a track as quickly as possible and stop as close to the center of a Terminal Barrier without breaking the egg.	Engineering Design (MS-ETS1–2-4) Science and Engineering Practices (2-6)
Towers – Prior to the competition teams design and build a tower meeting requirements to achieve the highest structural efficiency.	Science and Engineering Practices (2-6)
Wind Power – Teams will build a blade assembly that consists of any kind of propeller/pinwheel/rotor attached to a compact disc (CD), which will be used to capture wind power. Students will also be tested on their knowledge regarding alternative energy.	Science and Engineering Practices (2-8)
Wright Stuff – Prior to the tournament teams design, construct, and test free flight rubber-powered monoplanes to achieve maximum time aloft.	Science and Engineering Practices (2-6)
Write It/Do It – One student will write a description of an object and how to build it, and then the other student will attempt to construct the object from this description.	Science and Engineering Practices (2, 5-8)