

2017 NATIONAL SCIENCE OLYMPIAD – NEXT GENERATION SCIENCE STANDARDS ALIGNMENT

C (SENIOR HIGH SCHOOL) DIVISION

C Events	Next Generation Science Standards
Anatomy and Physiology – Understand the anatomy and physiology of the human body systems.	From Molecules to Organisms: Structures and Processes (HS-LS1–2-3)
Astronomy – Teams will demonstrate an understanding of the basic concepts of mathematics and physics relating to stellar evolution and star formation.	Earth’s Place in the Universe (HS-ESS1–2-3)
Chemistry Lab – Teams will complete one or more tasks and answer a series of questions involving the Science processes of chemistry focused in the areas of kinetics and gases.	Matter and Its Interactions (HS-PS1–2, 4-5, 7)
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.	Earth and Human Activity (HS-ESS3–4) Engineering Design (HS-ETS1–2-3) Science and Engineering Practices (2)
Dynamic Planet – Teams will complete tasks related to plate tectonics.	Earth’s Systems (MS-ESS2–2-3; HS-ESS2–2-3)
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)
Electric Vehicle – Teams must design, build, and test one vehicle that uses electrical energy as its sole means of propulsion to travel as quickly as possible and stop as close to a target point.	Science and Engineering Practices (2-8)
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)
Forensics – Given a scenario and some possible suspects, students will perform a series of tests. These tests, along with other evidence or test results will be used to solve a crime.	Science and Engineering Practices (2-8)
Game On – This event will determine a team’s ability to design and build on an original computer game incorporating the theme provided to them by the supervisor using the program Scratch.	Science and Engineering Practices (2, 5)
Helicopters – Teams will design, build, and test free flight helicopters to achieve maximum time aloft.	Science and Engineering Practices (2-6)
Hovercraft – Teams will construct a self-propelled air-levitated vehicle.	Science and Engineering Practices (2-6)
Hydrogeology – Students will manipulate a groundwater computer model, answer questions about groundwater concepts, and evaluate solutions, based on hydrogeological evidence, to reduce anthropogenic effects on groundwater.	Earth and Human Activity (HS-ESS3–4, 6) Science and Engineering Practices (2, 5-6, 8)
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)
Materials Science – Students will answer questions or complete tasks involving the science process of chemistry focused in the area of materials science.	Matter and Its Interactions (HS-PS1–3) Motion and Stability: Forces and Interactions (HS-PS2–6) Science and Engineering Practices (2-8)
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, 3-7)

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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 (HS-PS4–1, 3-5)
Remote Sensing – Participants will use remote sensing imagery, data, and computational processes skills to complete tasks related to climate change processes in the Earth system.	Waves and their Applications in Technologies for Information Transfer (HS-PS4–1, 2, 5) Earth’s Systems (HS-ESS2–2, 4-5)
Robot Arm – Prior to the competition, teams must design, build, document, and test one robotic device to move Scorable Items.	Science and Engineering Practices (2-8)
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)
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)
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)