

**2019 NATIONAL SCIENCE OLYMPIAD STANDARDS ALIGNMENT BY EVENT
B DIVISION (MIDDLE SCHOOL; Grades 6-9)**

Event	Standards
ANATOMY AND PHYSIOLOGY – Understand the anatomy and physiology of human body systems.	<i>MS-LS 1–3</i>
BATTERY BUGGY – Teams will construct a vehicle that uses electrical energy as its sole means of propulsion, quickly travels a specified distance, and stops as close as possible to the Finish Point.	<i>MS-PS 2-1, MS-PS 3-5, MS-ETS 1-1, MS-ETS 1-2, MS-ETS 1-3, MS-ETS 1-4</i>
BOOMILEVER – Teams will design and build a Boomilever meeting requirements specified in these rules to support a minimum load and achieve the highest structural efficiency.	<i>MS-ETS 1-1, MS-ETS 1-2, MS-ETS 1-3, MS-ETS 1-4</i>
CIRCUIT LAB – Participants must complete tasks and answer questions about electricity and magnetism.	<i>MS-PS 2-3, MS-PS 2–5, MS-PS 3-2,</i>
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.	<i>MS-PS 1–2, MS-PS 1–3, MS-ETS 1-1, MS-ETS 1-2, MS-ETS 1-3</i>
DENSITY LAB – Participants compete in activities and answer questions about mass, density, number density, area density, concentration, pressure, and buoyancy.	<i>MS-PS 1-2, MS-PS 1-4, HS-PS 1-3, HS-PS 1-5</i>
DISEASE DETECTIVES – Participants will use their investigative skills in the scientific study of disease, injury, health, and disability in populations or groups of people.	<i>MS-LS 1-5, MS-LS 2-2, MS-LS 2-4, MS-LS 4-4, MS-ESS 3-4, MS-ETS 1-1, MS-ETS 1-2, MS-ETS 1-3</i>
DYNAMIC PLANET – Students will use process skills to complete tasks related to glaciers, glaciation, and long-term climate change.	<i>MS-ESS 2-2, MS-ESS 2-4, MS-ESS 3-2, MS-ESS 3-3, MS-ESS3-5</i>
ELASTIC LAUNCHED GLIDER – Prior to the tournament teams design, construct, and test elastic-launched gliders to achieve the maximum time aloft.	<i>MS-PS 2-1, MS-PS 3-5, MS-ETS 1-1, -ETS 1-2, MS-ETS 1-3, MS-ETS 1-4.</i>
EXPERIMENTAL DESIGN – This event will determine the participant’s ability to design, conduct, and report the findings of an experiment conducted entirely on site.	<i>MS-PS 1-2, MS-PS 1-4, MS-PS 1-5, MS-PS 2-2, MS-PS 2-5, MS-PS 3-1, MS-PS 3-4, MS-LS 1–1, MS-LS 1–3, MS-LS 1–6</i>
FOSSILS – Teams use fossils to date and correlate rock units as well as demonstrate their knowledge of ancient life by completing tasks related to fossil identification and classification.	<i>MS-PS 2-3, MS-LS 4-1, MS-LS 4-2,</i>
GAME ON – This event will determine a team’s ability to design and build an original computer game using the program Scratch incorporating the scientific theme provided to them by the supervisor.	<i>MS-ETS 1-1, MS-ETS 1-2, MS-ETS 1-3, K-12 Computer Science Framework: 6-8 Algorithms and Programming; 6-8 Data and Analysis;</i>
HEREDITY – Participants will solve problems and analyze data or diagrams using their knowledge of the basic principles of genetics.	<i>MS-LS 3-1, MS-LS 3-2</i>
HERPETOLOGY – Participants will be assessed on their knowledge of amphibians and reptiles.	<i>MS-LS 1-4, MS-LS 4-2, MS-LS 4-3</i>
METEOROLOGY – This event emphasizes understanding of basic meteorological principles with emphasis on analysis and interpretation of meteorological data, graphs, charts, and images.	<i>MS-ESS 2-5, MS-ESS 2-6, MS-ESS 3-2,</i>
MYSTERY ARCHITECTURE – At the beginning of the event, teams will be given a bag of building materials and instructions for designing and building a device that can be tested.	<i>MS-ETS 1-1, MS-ETS 1-2, MS-ETS 1-3, MS-ETS 1-4</i>
POTIONS AND POISONS – This event is about chemical properties and effects of specified toxic and therapeutic chemical substances, with a focus on household and environmental toxins or poisons.	<i>MS-PS 1-2, MS-PS 1-3, MS-LS 2-3MS-LS 2-4</i>
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.	<i>MS-ESS 2-3, MS-ESS 3-1</i>
ROLLER COASTER – Prior to the competition, teams design, build, and test a Roller Coaster track to guide a ball/sphere that uses gravitational potential energy as its sole means of propulsion to travel as close as possible to a Target Time.	<i>MS-PS 2-1, MS-PS 2-2, MS-PS 3-1, MS-PS 3-5, MS-ETS 1-1, MS-ETS 1-2, MS-ETS 1-3, MS-ETS 1-4</i>
SOLAR SYSTEM – Participants will demonstrate an understanding and knowledge of the geologic characteristics and evolution of the Earth’s moon and other rocky bodies of the solar system.	<i>MS-ESS 1-1, MS-ESS 1-2, MS-ESS 1-3</i>

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<p>THERMODYNAMICS – Teams must construct an insulating device prior to the tournament that is designed to retain heat and complete a written test on thermodynamic concepts.</p>	<p><i>MS-PS 1-4, MS-PS 3-3, MS-PS 3-4, MS-ETS 1-1, MS-ETS 1-2, MS-ETS 1-3, MS-ETS 1-4,</i></p>
<p>WATER QUALITY – Participants will be assessed on their understanding and evaluation of aquatic environments.</p>	<p><i>MS-LS 2-1, MS-LS 2-2, MS-LS 2-3, MS-LS 2-4</i></p>
<p>WRITE IT/DO IT – One participant will write a description of an object and how to build it. The other participant will attempt to construct the object from this description.</p>	<p>CCSS ELA Standards <i>W6.2, W7.2, W8.2</i></p> <p>K-12 Computer Science Framework <i>6-8 Algorithms and Programming,</i></p>