

2011 NATIONAL SCIENCE OLYMPIAD – NATIONAL SCIENCE STANDARDS ALIGNMENT

B (Middle School) Division

B EVENTS	NATIONAL STANDARD
Anatomy – Teams will be tested on their knowledge of anatomy and health concepts including respiratory and muscular systems.	M.C.1 – Structure and function in living systems M.F.1 – Personal health
Awesome Aquifers – Students will construct an aquifer and answer questions about groundwater concepts - includes a presentation.	M.D.1 – Structure of the earth system M.U.2 – Evidence, models, and explanation
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 center of the finish line.	M.E.1 – Abilities of technological design
Bottle Rockets – Prior to the tournament, teams construct up to 2 rockets designed to stay aloft for the greatest amount of time.	M.E.1 – Abilities of technological design
Can't Judge a Powder – Students will test and characterize one pure substance and then, based only on data they collect, answer a series of questions about that substance.	M.B.1 – Properties and changes of properties in matter
Compute This – Teams will be presented with a problem which requires quantitative data capture from the Internet and the presentation of data in a graphical format.	M.A.1 – Abilities necessary to do scientific inquiry
Crime Busters – Teams will identify the perpetrators of a crime or crimes by using paper chromatography and analysis of unknown solids, liquids, and plastics found at the scene of a crime.	M.A.1 – Abilities necessary to do scientific inquiry M.B.1 – Properties and changes of properties in matter
Disease Detectives – This event requires students to apply principles of epidemiology to a published report of a real-life health situation or problem. (Food Borne Illness)	H.F.1 - Personal and community health H.G.1 - Science as a human endeavor
Dynamic Planet – Teams will work at stations that display a variety of earth science materials and related earth science questions. (Earth's Fresh Waters)	M.D.1 – Structure of the earth system
Ecology – Students will answer questions involving content knowledge and process skills in the area of ecology and adaptation by examining different ecosystems. (Tundra/Taiga)	M.C.4 – Populations and ecosystems
Experimental Design – Given a set of unknown objects, teams will design, conduct, analyze and write-up an experiment.	M.A.1 – Abilities necessary to do scientific inquiry
Fossils – Students will identify, describe, and classify various specimens.	M.D.2 – Earth's history H.D.3 – Origin and evolution of the earth system
Junkyard Challenge – Students will partially pre-construct an device with final construction and adaptation onsite to complete a published challenge.	M.E.1 – Abilities of technological design
Meteorology – This event involves the use of process skills as applied to meteorology (Severe Storms).	M.D.1 – Structure of the earth system H.D.1 – Energy in the earth system
Microbe Mission – Teams will answer questions, solve problems and analyze data pertaining to microbes.	H.C.1 – The cell
Optics – Teams compete in activities and answer questions related to geometric and physical optics.	M.B.3 – Transfer of Energy H.B.6 – Interactions of energy and matter
Ornithology – This event will test knowledge of North American birds on the official list.	H.C.3 – Biological evolution
Road Scholar – Requires the accurate interpretation and understanding of various map features using a variety of road and topographic maps.	M.U.2 – Evidence, models, and explanation
Shock Value – Students will compete in activities involving basic understanding of electricity, magnetism and simple electrical devices.	M.B.3 – Transfer of Energy
Solar System – Teams will demonstrate knowledge of the Sun, planets and their satellites, dwarf planets, comets, asteroids, the asteroid belt, meteoroids, Oort Cloud and the Kuiper Belt.	M.D.3 – Earth in the solar system
Storm the Castle – Prior to the tournament, teams design, construct and calibrate a device that uses only the energy of a falling counterweight to launch a projectile as far and as accurately as possible.	M.E.1 – Abilities of technological design
Towers – Team members design and build the most efficient tower.	M.E.1 – Abilities of technological design
Write It/Do It – A technical writing exercise where students write a description of a contraption and other students will attempt to recreate it using only the written description.	M.E.1 – Abilities of technological design

